

حمل الآن

مجانا وحصريا

امتحانات رقم (1)

الترم الثاني



Final assessment from the School Book



First Group of Questions

► Choose the correct answer from the given ones :

- 1 In the experiment of tossing a fair coin two consecutive times , what is the number of times of appearance of one head at least ?
(a) 1 (b) 2 (c) 3 (d) 4
- 2 $\frac{1}{4}$ of the number 4^8 is
(a) 4^2 (b) 4^4 (c) 4^6 (d) 4^7
- 3 A trapezium with a height of 5.4 cm and the lengths of its parallel bases are 8 cm and 10 cm , has an area of square centimeters.
(a) 48.6 (b) 54 (c) 97.2 (d) 432
- 4 If $7.5 \times 10^n = 0.000075$, what is the value of n ?
(a) - 5 (b) - 4 (c) 4 (d) 5
- 5 $(x^3 + x^2 + x) \div x = \dots\dots\dots$
(a) $x^3 + x^2$ (b) $x^2 + x$ (c) $x^2 + x + 1$ (d) 0
- 6 What is the image of the point (3 , 4) by translation $(x, y) \longrightarrow (x - 4, y - 2)$?
(a) (2 , 1) (b) (1 , - 2) (c) (- 1 , 2) (d) (- 1 , - 2)
- 7 If $x^3 + 124 = - 1$, what is the value of x ?
(a) - 5 (b) - 4 (c) 4 (d) 5
- 8 What is the image of the point (- 2 , 4) by reflection in the x-axis ?
(a) (- 2 , - 4) (b) (2 , 4) (c) (- 4 , 2) (d) (4 , 2)
- 9 A rhombus with diagonal lengths of 10 cm and 15 cm has an area of square centimeters.
(a) 37.5 (b) 75 (c) 150 (d) 300

Second Group of Questions

► Answer the following questions :

- 1 Draw a line segment of length 4.5 cm , then bisect it using a ruler and compass.
- 2 Simplify to its simplest form : $\left(\frac{14}{15}\right)^0 - \sqrt{\frac{9}{25}} + \sqrt[3]{\frac{64}{125}}$
- 3 If the quotient of the expression : $(x^3 - 25x)$ divided by $(x + 5)$ is $x^2 + a x$, what is the value of a ?
- 4 Simplify the expression : $(4n - 3)^2 - (4n - 3)(4n + 3)$ to its simplest form , then find the numerical value of the expression when $n = -1$
- 5 Draw on the grid , the rectangle ABCD where A (1 , 1) , B (3 , 1) , C (3 , 6) , D (1 , 6) , then find its image by rotation R (O , 90°)
- 6 What is the solution set of the inequality $3x - 2 \leq 4$ in $\mathbb{N}$?
- 7 In an experiment of rolling a fair die once , what is the probability of obtaining :
(A) a number greater than 2 ?
(B) a prime number less than 4 ?

Directorate Exams



1

New Cairo Administration
Mathematics Guidance

Cairo Governorate



Answer the following questions :

First Group :

► Choose the correct answer :

1 $\frac{1}{4}$ the number $(4)^8$ is

- (a) $(4)^2$ (b) $(4)^4$ (c) $(4)^6$ (d) $(4)^7$

2 The multiplicative inverse of the number $\sqrt{\frac{1}{9}}$ is

- (a) 3 (b) $-\frac{1}{3}$ (c) $\frac{1}{3}$ (d) -3

3 $\sqrt[3]{-8} = \dots\dots\dots$

- (a) 4 (b) 2 (c) -2 (d) -4

4 The inequality that expresses three times a number x is greater than 4 is

- (a) $3x < 4$ (b) $3x > 4$ (c) $x - 3 < 4$ (d) $3x \geq 4$

5 $\frac{-6x^4}{2x^2} = \dots\dots\dots$

- (a) $-3x^2$ (b) $3x^2$ (c) $-3x^4$ (d) $3x^4$

6 The solution set of the equation $(x - 3)(x + 3) = 0$ in $\mathbb{Q}$ is

- (a) $\{3\}$ (b) $\{-3\}$ (c) $\emptyset$ (d) $\{3, -3\}$

7 If the area of a rhombus is 100 cm^2 , then the product of the lengths of its diagonals is

- (a) 25 (b) 50 (c) 100 (d) 200

8 The image of the point $(1, 3)$ under translation $(-2, 1)$ is

- (a) $(1, 4)$ (b) $(-1, 4)$ (c) $(-1, -4)$ (d) $(-4, 1)$

9 The image of the point $(1, 3)$ under rotation $R(O, 90^\circ)$ is

- (a) $(-3, 1)$ (b) $(-1, -3)$ (c) $(3, -1)$ (d) $(-1, 3)$

► **Answer the following questions :**

- 2

Cairo Governorate



First Group :

1 A trapezium has parallel bases of lengths 8 cm. and 10 cm. and its height is 5.4 cm.

(a) 4.32

(b) 97.2

(c) 54

(d) 48.6

- (a) $\{3, 4, 5, \dots\}$

(b) $\{2, 1, 0, \dots\}$

(c) $\{3, 2, 1, \dots\}$

(d) $\{3, 5, 7, \dots\}$

- (a) – 5

(b) - 4

(c) 4

(d) 5

- (a) – 25

(b) - 10

(c) 20

(d) 10

- 5 If $\frac{10}{y} = \frac{y}{10}$, then $y = \dots\dots\dots$
 (a) 100 (b) ± 5 (c) 20 (d) ± 10
- 6 A cube has a total surface area of 54 cm^2 . The length of its edge is $\dots\dots\dots \text{ cm}$.
 (a) 2 (b) 4 (c) 3 (d) 9
- 7 The image of the point (3, 4) under the translation $(-4, -2)$ is $\dots\dots\dots$
 (a) $(-1, 2)$ (b) $(-1, -2)$ (c) $(2, 1)$ (d) $(1, -2)$
- 8 $5a^0 - (5a)^0 = \dots\dots\dots$
 (a) 4 (b) 1 (c) 0 (d) 5
- 9 If $(5x^2 + 15x) \div (-5x) = ax - 3$, then the value of a is $\dots\dots\dots$
 (a) $-x$ (b) -1 (c) 1 (d) x

Second Group :

► Answer the following questions :

- 1 Find the solution set in $\mathbb{Z}$ of the equation : $3x^3 - 3 = 2x^3 + 5$
- 2 Draw the triangle XYZ where $XZ = YZ = 5 \text{ cm}$. and $XY = 6 \text{ cm}$. , then bisect both $\angle X$ and $\angle Y$ by two bisectors which intersect at point M. Is $MY = MX$?
- 3 If $(x + 2)$ is one of the factors of $5x^2 + 4x - 12$, find the other factor.
- 4 Simplify to the simplest form : $(x + 2y)(x - 2y) + (x + y)^2$
- 5 A fair coin was tossed twice in succession , and the sequence of heads and tails was observed.
 Find the probability of each of the following events :
 [a] Event A : "Obtaining two heads"
 [b] Event B : "Obtaining at least one head"
- 6 A bag contains 20 identical cards numbered from 1 to 20. A card is randomly drawn and the number on it is observed. Find the probability of each of the following events :
 [a] Event A : "Obtaining an even number greater than 10"
 [b] Event B : "Obtaining a number which is a factor of 12"
- 7 Draw the rectangle ABCD where : A (1, 1) , B (3, 1) , C (3, 4) , D (1, 4)
 , then draw its image under rotation $R(O, -90^\circ)$



Answer the following questions :

First Group :

► **Choose the correct answer :**

1 $(10x^4 + 2x^3) \div 2x = \dots\dots\dots$

(a) $5x^3 + x$

(b) $5x + 1$

(c) $5x^2 + 2x$

(d) $5x^3 + x^2$

2 $\sqrt{\frac{25x^6}{4y^{10}}} = \dots\dots\dots$

(a) $\frac{5x^6}{2y^{10}}$

(b) $\frac{5x^3}{2y^5}$

(c) $\frac{5x^6}{4y^5}$

(d) $\frac{5x^2}{2y^5}$

3 $\left(\frac{4}{3}\right)^{-2} = \dots\dots\dots$

(a) $\frac{9}{16}$

(b) $\frac{5}{6}$

(c) $\frac{-9}{16}$

(d) $\frac{3}{4}$

4 $x(x+2) = \dots\dots\dots$

(a) $4x^2$

(b) $2x^2$

(c) $x^2 + 2x$

(d) $x^2 + x$

5 Which of the following equals 0.0000025 ?

(a) 2.5×10^5

(b) 2.5×10^{-5}

(c) 2.5×10^6

(d) 2.5×10^{-6}

6 A rhombus of diagonals lengths 7 cm. and 8 cm. has an area of cm^2

(a) 65

(b) 56

(c) 28

(d) 15

7 What is the image of the point $(-2, 1)$ by rotation $R(O, 180^\circ)$?

(a) $(-2, 1)$

(b) $(2, -1)$

(c) $(-1, -2)$

(d) $(-2, -1)$

8 The S.S. of the equation : $x^3 + 8 = 0$ in $\mathbb{Q}$ is

(a) -2

(b) $\{-2\}$

(c) ± 2

(d) $\{2\}$

9 What is the image of the point $(3, 5)$ by translation $(x, y) \longrightarrow (x+2, y-3)$?

(a) $(5, 5)$

(b) $(5, 2)$

(c) $(2, 5)$

(d) $(5, -2)$

Second Group :

► **Answer the following questions :**

1 Simplify to the simplest form : $\sqrt{\frac{9}{4}} + \sqrt[3]{\frac{-27}{8}} + \left(\frac{4}{9}\right)^0$

2 Find in its simplest form : $\frac{x \times x^6 \times x^{-2}}{x^{-3} \times x^8}$

- 3 A bag contains one red ball , 6 blue balls , and 3 green balls , all balls are identical.
If a ball is drawn randomly from the bag and its color is observed , **find the probability that the drawn ball is :**

[a] blue.

[b] red.

[c] blue or green.

- 4 Draw an equilateral triangle ABC with a side length of 4 cm.

- 5 Find the solution set of the following inequality in $\mathbb{Q}$: $3x - 5 < 4$

- 6 Draw the triangle ABC where A (2 , 4) , B (1 , 1) , and C (4 , 1) , then draw its image by reflection in the x -axis followed by reflection in the y -axis.

- 7 In an experiment of rolling a fair die once , **what is the probability of obtaining :**

[a] a number greater than 2 ?

[b] a prime number less than 4 ?



El-Haram Directorate
Egyptian International Schools

Giza Governorate



Answer the following questions :

First Group :

► Choose the correct answer :

1 $24x^6 \div \dots = 6x^2$

(a) $4x^4$

(b) $4x^3$

(c) $4x^2$

(d) $4x$

- 2 If $-x < 3$, then which of the following is correct ?

(a) $x > 3$

(b) $x > -3$

(c) $x < 3$

(d) $x < -3$

- 3 If $(x-5)(x+2) = x^2 + bx + c$, then $c = \dots$

(a) -10

(b) -7

(c) 3

(d) -5

- 4 The side length of a square with area 36 cm^2 is $\dots$

(a) 6

(b) 12

(c) 9

(d) 2

- 5 Which of the following equals 0.000037 ?

(a) 3.7×10^6

(b) 3.7×10^5

(c) 3.7×10^{-5}

(d) 3.7×10^{-6}

- 6 $(3a^2b)(5ab) = \dots$

(a) $15a^3b^2$

(b) $5ab$

(c) $15a^2b^2$

(d) $15ab$

- 7 $\sqrt{16x^2} = \dots$

(a) $4x$

(b) $4|x|$

(c) $-4x$

(d) $4x^2$

8 The image of the point $(-4, -9)$ by reflection of X -axis is

- (a) $(4, -9)$ (b) $(-4, 9)$ (c) $(4, 9)$ (d) $(-4, -9)$

9 What rotation makes the image of the point $A(2, -6)$ becomes $A(-2, 6)$?

- (a) $R(O, 180^\circ)$ (b) $R(O, 90^\circ)$ (c) $R(O, -90^\circ)$ (d) $R(O, 360^\circ)$

Second Group :

► Answer the following questions :

1 Simplify : $\sqrt[3]{\frac{125}{27}} \times \sqrt{\frac{81}{25}} \times \left(\frac{4}{9}\right)^0$

2 Find the S.S. in $\mathbb{Z}$: $5x + 1 < 2(x + 2)$

3 Find the expansion of : $(3a + 5)^2$

4 A bag contains 10 identical cards numbered from 1 to 10 , one card is drawn randomly.

Write the following events :

[a] The event A of drawing number less than 4

[b] The event B of drawing odd numbers.

[c] The event C of drawing number divisible by 5

5 Find the area of a trapezium with two parallel bases 7 cm. , 9 cm. and height of 5 cm.

6 A bag contain 5 red balls , 3 green balls , 7 black balls all of them are identical , if a ball drawn randomly from the bag and the color is observed , find the probability of the drawn ball is :

[a] red

[b] not red

[c] white

7 Draw the triangle ABC where $A(-1, 1)$, $B(-3, 3)$, $C(-4, 1)$, then find its image by the translation $(x + 2, y + 1)$

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Agouza Administration
Khattab Language School

Giza Governorate



Answer the following questions :

First Group :

► Choose the correct answer from the given ones :

1 Third of $3^x = \dots\dots\dots$

(a) $\left(\frac{1}{3}\right)^x$

(b) 3^{x-1}

(c) 3^{x+1}

(d) 1^x

- 2 If $0.000073 = 7.3 \times 10^n$, then $n = \dots\dots\dots$
- (a) -6 (b) -5 (c) 5 (d) 6
- 3 If $\sqrt[3]{x} = -8$, then $x = \dots\dots\dots$
- (a) -512 (b) -2 (c) 2 (d) 64
- 4 If $-x < 5$, then $\dots\dots\dots$
- (a) $x < 5$ (b) $x < -5$ (c) $x > 5$ (d) $x > -5$
- 5 If $(3x - 7)^2 = mx^2 + kx + l$, then $k = \dots\dots\dots$
- (a) 42 (b) 21 (c) -42 (d) -21
- 6 $\frac{3x^2 - 6x}{3x} = \dots\dots\dots$
- (a) $x^2 - 2x$ (b) $x - 2$ (c) $-x^2$ (d) $-x$
- 7 Area of a square is 16 cm^2 , then its perimeter = $\dots\dots\dots$ cm.
- (a) 64 (b) 16 (c) 8 (d) 4
- 8 The image of the point $(-4, 2)$ by the rotation $R(O, 90^\circ)$ is the point $\dots\dots\dots$
- (a) $(-2, -4)$ (b) $(-4, -2)$ (c) $(-2, 4)$ (d) $(2, 4)$
- 9 If the lengths of the two diagonals of a rhombus are 15 cm. and 10 cm. , then its area = $\dots\dots\dots \text{ cm}^2$
- (a) 300 (b) 150 (c) 75 (d) 37.5

Second Group :

► Answer the following questions :

- 1 Find the S.S. of the following equation : $2x^2 + 1 = 33$ in $\mathbb{Z}$
- 2 Draw $\triangle ABC$ whose vertices are $A(3, 1)$, $B(3, 4)$ and $C(1, -2)$, then find its image by translation $(x, y) \longrightarrow (x + 1, y - 2)$
- 3 Simplify : $(2x + 5)(2x - 5) + 25$, then find the numerical value of the resulting expression when $x = -1$
- 4 Find in $\mathbb{Q}$ the S.S. of the following inequality : $2(x + 5) - 3 < 12$
- 5 A trapezium its area equals 175 cm^2 and the lengths of its two parallel bases are 14 cm. and 21 cm. Find its height.
- 6 A bag contains three green balls, six blue balls and one red ball, all of which are identical. If a ball is drawn randomly from the bag, find the probability of :
- [a] The drawn ball is green. [b] The drawn ball is red or green.
- [c] The drawn ball is white.

- 7 If a fair die is rolled once and the number appearing on the upper face is observed , find the probability of each of the following events :

[a] A is the event of getting an odd number.

[b] B is the event of getting a number greater than 4

[c] C is the event of getting the number 7

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East Educational Zone
Supervision of Mathematics

Alexandria Governorate



Answer the following questions :

First Group :

► Choose the correct answer :

- 1 The length of the middle base of trapezium is 10 cm. and its height is 3 cm.
 , then its area = cm^2
(a) 60 (b) 30 (c) 15 (d) 7.5
- 2 $2^{-4} = \dots\dots\dots$
(a) $\frac{1}{16}$ (b) $\frac{1}{8}$ (c) 16 (d) - 16
- 3 Which of the following expresses the numbers 8 million in scientific notation ?
(a) 8×10^8 (b) 8×10^{-6} (c) 8×10^6 (d) 8×10^7
- 4 The identity rotation is a rotation around the origin by an angle of measure =
(a) 360° (b) 180° (c) -90° (d) 90°
- 5 If $x^3 = -27$, then $x = \dots\dots\dots$
(a) -9 (b) ± 3 (c) -3 (d) 3
- 6 What is the inequality that expresses "twice the number x is less than 5" ?
(a) $2x > 5$ (b) $2x < 5$ (c) $x - 2 < 5$ (d) $x + 2 < 5$
- 7 $(-3x^2)(4x^3) = \dots\dots\dots$
(a) $12x^5$ (b) $-12x^6$ (c) $12x$ (d) $-12x^5$
- 8 $\frac{3x^2 - 6x}{3x} = \dots\dots\dots$
(a) $x - 2$ (b) $x^2 - 2x$ (c) $-x^2$ (d) $-x$
- 9 A square with a diagonal length of 12 cm. has an area of cm^2
(a) 180 (b) 144 (c) 72 (d) 36

Second Group :

► Answer the following questions :

- 1 Simplify : $\sqrt{\frac{81}{49}} + \left(\frac{-3}{5}\right)^0 + \sqrt[3]{\frac{125}{343}}$
- 2 In experiment of throwing a fair die once , what is the probability of :
[a] Event (A) is the event of appearing an odd number.
[b] Event (B) is the event of appearing a number more than 4
- 3 A classroom contains 15 students , 4 of them have black hair , 5 have brown hair , and 6 have blonde hair. If a student is chosen at random , find the probability that the student :
[a] Has black hair.
[b] Does not have brown hair.
[c] Has either blonde or brown hair.
- 4 Draw ΔABC where A (- 1 , 1) , B (3 , 1) , C (3 , 4) and draw the image of ΔABC by Translation (1 , - 2)
- 5 Draw ΔABC in which AB = 5 cm. , BC = 4 cm. , and AC = 3 cm.
(Using a ruler and a compass)
- 6 Find in the simplest form : $(2x + 5)^2$
- 7 Find the quotient of : $(-2x^2y + 4xy^2 - 6xy)$ divided by $(-2xy)$

7

Middle Zone

Alexandria Governorate



Answer the following questions :

First Group :

► Choose the correct answer from the given ones :

- 1 A rhombus with diagonal lengths 8 cm. , 7 cm. its area = cm^2
(a) 56 (b) 28 (c) 14 (d) 30
- 2 The image of the point (4 , - 1) by reflection on the y-axis is
(a) (- 1 , 4) (b) (4 , 1) (c) (- 4 , - 1) (d) (- 1 , - 4)
- 3 $(-12x^3) \div (-4x) = \dots\dots\dots$
(a) $3x^2$ (b) $-3x^2$ (c) $-3x$ (d) $48x^4$

- 4 If $39 \times 10^{-8} = k \times 10^{-7}$, then $k = \dots\dots\dots$
- (a) 39 (b) 3.9 (c) 0.39 (d) 0.039
- 5 $\frac{1}{4}$ of the number $4^8 = \dots\dots\dots$
- (a) 4^2 (b) 4^4 (c) 4^9 (d) 4^7
- 6 In an experiment of tossing a fair coin once and observing the upper face. Then the probability of obtaining a head (H) is $\dots\dots\dots$
- (a) 1 (b) $\frac{1}{2}$ (c) $\frac{1}{4}$ (d) zero
- 7 The image of the point $(-1, 0)$ by translation $(1, 0)$ followed by translation $(2, -3)$ is $\dots\dots\dots$
- (a) $(2, -3)$ (b) $(0, 0)$ (c) $(1, 0)$ (d) $(-1, 1)$
- 8 $\sqrt{x} = 4$, then $x = \dots\dots\dots$
- (a) 2 (b) -2 (c) 16 (d) 8
- 9 $(2x + 5)^2 = ax^2 + bx + c$, then the value of $b = \dots\dots\dots$
- (a) 4 (b) 20 (c) 10 (d) 25

Second Group :

► Answer the following questions :

- 1 Find S.S. in $\mathbb{Z} : 2x + 5 \leq 11$
- 2 Simplify : $(2x + 3)(2x - 3) + 9$, then find the numerical value at $x = -1$
- 3 Draw line segment $AB = 7$ cm. , then use ruler and compass to bisect it.
- 4 Draw $\triangle ABC$ where $A(3, 4)$, $B(1, 4)$, $C(1, 0)$, then draw its image by rotation $R(O, 180^\circ)$
- 5 Simplify to the simplest form : $\sqrt[3]{\frac{-125}{64}} \times \sqrt{\frac{16}{25}} + \left(\frac{4}{5}\right)^0$
- 6 Simplify : $\frac{x^{-6} \times x^2}{x^{-4} \times x^{-3}}$, then find the numerical value at $x = 2$
- 7 A bag contains 2 red balls , 5 blue balls and 3 green balls , all are identical. If a ball is drawn randomly , what is the probability that the drawn ball is :
- [a] red. [b] blue. [c] not green.



Answer the following questions :

First Group :

► **Choose the correct answer :**

- 1 If $45 \times 10^3 = k \times 10^4$, then $k = \dots\dots\dots$
 (a) 450 (b) 4.5 (c) 0.45 (d) 0.045
- 2 $\sqrt{\frac{25}{49}} + \left(\frac{3}{5}\right)^0 - \sqrt[3]{\frac{125}{343}} = \dots\dots\dots$
 (a) 1 (b) $1\frac{10}{7}$ (c) $\frac{10}{7}$ (d) $1\frac{3}{7}$
- 3 The numerical value of the expression : $a^2 - b^2$, where $a = -2$, $b = -3$ is $\dots\dots\dots$
 (a) -5 (b) 5 (c) -13 (d) 13
- 4 If $-3x^4 \times x^2 = ax^n$, then $a + n = \dots\dots\dots$
 (a) 5 (b) 3 (c) -3 (d) -5
- 5 $\frac{-12x^3y^3 + 4x^2y^3}{-4x^2y^3} = \dots\dots\dots$
 (a) $3x$ (b) $3x - 1$ (c) $3x + 1$ (d) $-3x - 1$
- 6 If $(2x - 1)^2 = ax^2 + bx + c$, then $b = \dots\dots\dots$
 (a) 4 (b) -4 (c) -2 (d) 2
- 7 If the length of the middle base of a trapezium is 12 cm. and its height is 10 cm. , then the area of the trapezium = $\dots\dots\dots$ cm.²
 (a) 120 (b) 60 (c) 22 (d) 11
- 8 A rhombus with a side length 8 cm. , and a height of 6 cm. , then its area = $\dots\dots\dots$ cm.²
 (a) 14 (b) 24 (c) 36 (d) 48
- 9 If the area of a square is 18 square feet , then the length of its diagonal = $\dots\dots\dots$ feet.
 (a) $\sqrt{18}$ (b) 36 (c) 6 (d) 9

Second Group :

► **Answer each of the following questions :**

- 1 Simplify to the simplest form : $\frac{(-a)^3 \times a^5 \times a^2}{(-a) \times a^4 \times a^3}$
- 2 Find the solution set of the inequality : $2x - 3 > x - 1$ in $\mathbb{Z}$
- 3 Draw an angle of measure 60° , then bisect it using the ruler and the compass.

- 4 Draw the triangle ABC where : A (- 3 , 2) , B (0 , 2) , C (2 , 4) , then draw its image under reflection in the X-axis.
- 5 If $(X - 4)$ is a factor of the expression $(X^2 - 5X + 4)$, then find the other factor.
- 6 Write the sample space of the following random experiment , indicating the number of its elements : Experiment of tossing a fair coin twice and observing the upper face.
- 7 A box contains 12 red balls , 3 blue balls and 5 black balls. All the balls are identical in shape and size. If one ball is selected at random , find the probability that the selected ball is :
[a] Black. [b] Not red. [c] Blue or red.

9

G.L.S. Administration
Mathematics Supervision

El-Sharkia Governorate



Answer the following questions :

First Group :

► Choose the correct answer :

- 1 $0.0028 = \dots\dots\dots$
(a) 2.8×10^3 (b) 2.8×10^{-3} (c) 2.8×10^2 (d) 2.8×10^{-2}
- 2 If $(3X - 2)(X + 4) = 3X^2 + nX - 8$, then $n = \dots\dots\dots$
(a) 7 (b) 3 (c) 10 (d) 13
- 3 $\sqrt[3]{2 + \dots\dots\dots} = 2$
(a) 0 (b) 6 (c) 8 (d) 3
- 4 If $3^{-2} \times b = 1$, then $b = \dots\dots\dots$
(a) 3^{-2} (b) 2^{-3} (c) 0 (d) 3^2
- 5 $(8X^2y + 4Xy^2) \div 4Xy = \dots\dots\dots$
(a) $2X + y$ (b) $8X$ (c) $12Xy$ (d) $4X + y$
- 6 If the area of a square is 200 cm^2 , then the length of its diagonal = $\dots\dots\dots$ cm.
(a) 10 (b) 20 (c) 15 (d) 25
- 7 $(3X - 5)^2 = 9X^2 - \dots\dots\dots + 25$
(a) 30 (b) - 30 (c) $30X$ (d) $\pm 30X$
- 8 A trapezium with area 80 cm^2 and one of its parallel bases of length 4 cm. and height 10 cm. , then the length of the other base = $\dots\dots\dots$ cm.
(a) 6 (b) 12 (c) 16 (d) 20
- 9 The image of the point $(-2, 4)$ under rotation $R(O, 90^\circ)$ is $\dots\dots\dots$
(a) $(-4, 2)$ (b) $(4, 2)$ (c) $(-4, -2)$ (d) $(4, -2)$

Second Group :

► Answer the following questions :

- 1 A fair coin was tossed once , and the sequence of head and tail was observed.

Find the probability of each of the following events :

[a] getting a head. [b] getting a tail.

- 2 Find in $\mathbb{Q}$ the value of x in the equation : $(2x - 3)(2x + 3) = 7$

- 3 $\triangle ABC$ where : A (3 , 4) , B (4 , 1) and C (0 , 1) , then find its image by the translation $(x, y) \longrightarrow (x - 4, y - 2)$.

- 4 Find the quotient of : $(x^2 - 2x - 15)$ divided by $(x - 5)$ where $x \neq 5$

- 5 Draw $\angle ABC$ of measure 80° , then bisect it using a ruler and compass.

- 6 Find in $\mathbb{Z}$ the solution set for the inequality : $2x - 9 \leq 5$

- 7 If a card is drawn randomly from identical cards numbered from 20 to 29.

Find the probability that the card carries :

[a] An even number. [b] A number less than 22



Berket El-Sabaa Directorate
Mathematics Supervision

El-Monofia Governorate



Answer the following questions :

First Group :

► Choose the correct answer :

- 1 If $\sqrt[3]{8} = \sqrt{x}$, then $x = \dots\dots\dots$

(a) 2 (b) 4 (c) 16 (d) 64

- 2 If $0.0000039 = 3.9 \times 10^n$, then $n = \dots\dots\dots$

(a) -5 (b) -6 (c) 5 (d) 6

- 3 A rhombus with diagonal lengths of 12 cm. and 16 cm. has an area of $\dots\dots\dots \text{cm}^2$

(a) 192 (b) 96 (c) 48 (d) 28

- 4 $(x^2 + x) \div x = \dots\dots\dots$

(a) 0 (b) x (c) $x + 1$ (d) $2x + 1$

- 5 If $x - y = 3$, $x + y = 6$, then $x^2 - y^2 = \dots\dots\dots$

(a) 2 (b) 3 (c) 18 (d) 9

- 6 Twice the number 2^6 is
- (a) 2^7 (b) 2^3 (c) 2^{12} (d) 2^5
- 7 A trapezium has an area of 70 cm^2 , the length of one of its parallel bases is 6 cm. and its height 10 cm. , then the length of its other base = cm.
- (a) 8 (b) 7 (c) 13 (d) 14
- 8 If $(X + 4)(X - 2) = X^2 + bX + c$, then the value of $b =$
- (a) -6 (b) 6 (c) 2 (d) -2
- 9 The image of the point $(-2, 0)$ by translation $(X, y) \longrightarrow (X + 2, y + 1)$ followed by translation $(2, 1)$ is
- (a) $(0, 1)$ (b) $(2, 2)$ (c) $(0, 0)$ (d) $(6, 2)$

Second Group :

► Answer the following questions :

- 1 Find in simplest form : $(3X + 2)(3X - 2) + (X + 2)^2$
- 2 Simplify to its simplest form : $\sqrt{\frac{25}{4}} \times \left(-\frac{2}{9}\right)^0 \times \left(-\frac{2}{5}\right)^2$
- 3 A bag contains 3 red balls , 5 blue balls , 7 green balls. All balls are identical.
Find the probability that the drawn ball is :
- [a] blue ball [b] red ball [c] blue or green ball
- 4 Find the solution set of inequality : $4(3X - 2) > 2(2X + 1)$, $X \in \mathbb{Q}$
- 5 Draw $\triangle ABC$ in which $AB = 6 \text{ cm}$. , $BC = 5 \text{ cm}$. , $AC = 5 \text{ cm}$.
- 6 When a fair die is rolled once and the upper face is observed. Write sample space , then find the probability of the following events :
- [a] getting an even number. [b] getting a prime even number.
- 7 Draw $\triangle ABC$ in which $A(2, 1)$, $B(4, 1)$, $C(4, 4)$, then find its image under rotation $R(O, 90^\circ)$

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Central Mathematics Supervision

El-Gharbia Governorate



Answer the following questions :

First Group :

► Choose the correct answer :

- 1 If $X = \sqrt{\frac{1}{9}}$, what is the value of X^3 ?
- (a) $\frac{1}{3}$ (b) $\frac{1}{9}$ (c) $\frac{1}{27}$ (d) $\frac{1}{81}$

2 If $6.3 \times 10^n = 0.00063$, what is the value of n ?

- (a) -4 (b) -3 (c) 3 (d) 4

3 $5a^0 - (5a)^0 = \dots\dots\dots$

- (a) 0 (b) 4 (c) 5 (d) 10

4 If $(X - 5)(X + 5) = X^2 + bX + c$, what is the value of b ?

- (a) -25 (b) -10 (c) 0 (d) 10

5 If $\frac{2X+a}{X+3} = 2$, what is the value of a ?

- (a) 2 (b) 3 (c) 5 (d) 6

6 What rotation makes the image of the point $A(2, -6)$ become $\hat{A}(-6, -2)$?

- (a) $R(O, -90^\circ)$ (b) $R(O, -90^\circ)$ (c) $R(O, -180^\circ)$ (d) $R(O, 180^\circ)$

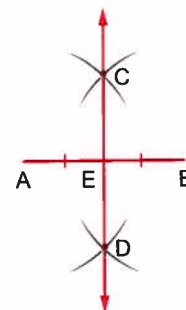
7 $\dots\dots\dots \div (-2X^2y) = 12Xy^2$

- (a) $6Xy$ (b) $-6Xy$ (c) $246X^3y^3$ (d) $-24X^3y^3$

8 When bisecting the line segment $\overline{AB}$ with a compass

, you must have $\dots\dots\dots$

- (a) $AC < \frac{1}{2}AB$
(b) $AC < AD$
(c) $AC > \frac{1}{2}AB$
(d) $AC < AE$



9 What is the image of the point $(2, -1)$ by the translation $(X, y) \longrightarrow (X - 3, y + 4)$?

- (a) $(-1, 5)$ (b) $(-3, 4)$ (c) $(5, 3)$ (d) $(-1, 3)$

Second Group :

► Answer the following questions :

1 Find in the simplest form : $\frac{2^5 \times 7^4 \times 10^7}{2^3 \times 10^6 \times 7^3}$

2 What is the solution set of the inequality : $3X - 2 \leq 4$ in $\mathbb{N}$

3 A trapezium with base length of 6 meters, X meters, and a height of 9 meters, has an area of 72 square meters. Find the value of X

4 In an experiment of rolling a fair die once, find the probability of each of the following events.

[a] A the event of getting an odd number.

[b] B the event of getting a number greater than 4

[c] C the event of getting the number 7

5 Simplify the expression : $(4X - 3)(4X + 3) + 9$, then find the result at $X = 2$

- 6 In the experiment of tossing a fair coin twice successively and observing the sequence of appearances of heads and tails

[a] write the sample space (s).

and then express each of the following events.

[b] Event (A) is the event of "appearance of different outcomes on both tosses".

[c] Event (B) is the event of "appearance of the same outcome on both tosses".

- 7 Draw on the grid ΔABC where $A(-6, 6)$, $B(-2, 2)$, $C(4, 1)$, then find its image by reflection in the y-axis.

12

Maths Supervision

El-Dakahlia Governorate



Answer the following questions : (Calculator is permitted)

First Question :

[a] Choose the correct answer :

1 $3y^{-3} = \dots\dots\dots (y \neq 0)$

(a) $3y^2$

(b) $\frac{1}{3}y^3$

(c) $\frac{3}{y^3}$

(d) $\frac{3}{y}$

2 The image of the point $(-2, -5)$ with reflection in y-axis is

(a) $(2, 5)$

(b) $(2, -5)$

(c) $(-2, 5)$

(d) $(-2, -5)$

3 If $2^6 \times a = 2^{24}$, then $a = \dots\dots\dots$

(a) 2^{18}

(b) 2^{30}

(c) 2^6

(d) 18

[b] Find the result of : $\sqrt{\frac{49}{25}} + \left(\frac{3}{4}\right)^0 + \sqrt[3]{\frac{512}{125}}$

Second Question :

[a] Find the quotient of : $\frac{4ab^3 - 16a^3b + 20a^2b^2}{4ab}$, ($a, b \neq 0$).

[b] Choose the correct answer :

1 $4(x - 3) = \dots\dots\dots$

(a) $4x - 3$

(b) $4x - 12$

(c) $4x - 3$

(d) $4x - 1$

2 If the area of square whose diagonal length 8 cm. is cm^2

(a) 32

(b) 64

(c) 16

(d) 128

3 The quotient of $(x^2 - 2x - 24)$ divided by $(x + 4)$ is

(a) $x + 6$

(b) $x - 4$

(c) $x + 4$

(d) $x - 6$

Third Question :

[a] Choose the correct answer :

- 1 If $(x + 7)(x - 7) = x^2 + k$, then $k = \dots\dots\dots$
(a) - 49 (b) 49 (c) - 14 (d) 14
- 2 If $0.0000023 = 2.3 \times 10^n$, then $n = \dots\dots\dots$
(a) - 5 (b) - 6 (c) 6 (d) 5
- 3 The image of the point $(-3, 2)$ by translation $(-5, -3)$ is $\dots\dots\dots$
(a) $(8, -5)$ (b) $(-8, -1)$ (c) $(2, -1)$ (d) $(-2, 1)$

[b] Find the area of trapezium with height 7 cm. and length of its middle base is 10 cm.

Fourth Question :

[a] A bag contains 6 green balls , 3 red balls , 8 black balls , all balls are identical.

A ball is drawn randomly , find the probability that the drawn ball is :

- 1 black. 2 not green. 3 white.

[b] Find in $\mathbb{N}$ the solution set of the inequality : $3x - 5 \leq 7$

Fifth Question :

[a] In the experiment of throwing a regular die once , find the probability of appearing :

- 1 An even number. 2 A number ≥ 6 3 A number less than 3

[b] Draw $\triangle ABC$, $AB = AC = BC = 5$ cm , by using ruler and compasses.



Directorate of Education
Maths Supervision

Ismailia Governorate



Answer the following questions :

First Group :

► Choose the correct answer :

- 1 $570000 = 5.7 \times 10^m$, then $m = \dots\dots\dots$
(a) 4 (b) 5 (c) - 4 (d) - 5
- 2 $20a^3b^2 \div 5a^2b^2 = \dots\dots\dots$
(a) 4 ab (b) 15 a (c) 4 a (d) 15 ab
- 3 The two diagonals lengths of a rhombus are 8 cm. , 6 cm. , then its area = $\dots\dots\dots$ cm²
(a) 14 (b) 48 (c) 28 (d) 24
- 4 Image of $(2, 5)$ by reflection in X-axis is $\dots\dots\dots$
(a) $(2, -5)$ (b) $(-2, 5)$ (c) $(-2, -5)$ (d) $(2, 5)$

5 $4 a b^2 \times 3 a = \dots\dots\dots$

(a) $12 a b^2$

(b) $12 a^2 b^2$

(c) $7 a b^2$

(d) $14 a^2 b^2$

6 If $(X + 3)(X - 3) = X^2 + mX - 9$, then $m = \dots\dots\dots$

(a) 9

(b) 6

(c) 0

(d) -9

7 $\sqrt[3]{16} - \sqrt[3]{27} = \dots\dots\dots$

(a) -1

(b) 4

(c) 0

(d) 1

8 $2X^{-1} = \dots\dots\dots$

(a) $\frac{2}{X}$

(b) $-2X$

(c) $2X$

(d) X^2

9 Image of (3, 7) by rotation R (O, 90°) is $\dots\dots\dots$

(a) (-7, -3)

(b) (-7, 3)

(c) (7, -3)

(d) (7, 3)

Second Group :

► Answer the following questions :

1 Find in $\mathbb{Q}$ the S.S. of : $X^3 - 1 = 7$

2 Draw $\overline{AB}$ of length 6 cm and bisect it.

3 Find in the simplest form : $(2X + 5)(X + 3)$

4 A fair die is rolled once , find probability of getting :

[a] an odd number.

[b] a number more than 4

[c] the number 5

5 Draw $\triangle ABC$ where A (1, 1) , B (5, 1) , C (5, 5) and draw its image by reflection in y-axis

6 Divide : $15X^3Y^4 + 20X^4Y^3 - 25X^2Y^2$ by $5X^2Y^2$

7 A bag contains 5 red balls , 3 white balls and 2 blue balls , if a ball selected randomly , find probability of getting :

[a] a red ball.

[b] a not white ball.

[c] a black ball.



Directory of Education
Math Supervisors

Suez Governorate



Answer the following questions :

First Group :

► Choose the correct answer from those given :

1 A rhombus , the lengths of its diagonals are 8 cm. , 10 cm. , its area = $\dots\dots\dots$ cm^2

(a) 80

(b) 40

(c) 18

(d) 9

- 2 A trapezium its middle base length is 8 cm. and its height is 5 cm. , then its area equals cm²
 (a) 25 (b) 64 (c) 40 (d) 80
- 3 What is the image of the point (5 , - 2) by rotation R (O , 180°) ?
 (a) (- 5 , 2) (b) (2 , - 5) (c) (5 , - 2) (d) (2 , 5)
- 4 $0.000075 = 7.5 \times 10^n$, then n =
 (a) - 5 (b) - 4 (c) 5 (d) 4
- 5 $(- 2)^3 = \dots\dots\dots$
 (a) 6 (b) - 6 (c) - 8 (d) 8
- 6 The additive inverse of $\sqrt{\frac{9}{25}}$ in simplest form =
 (a) $\frac{3}{5}$ (b) $-\frac{3}{5}$ (c) $\frac{5}{33}$ (d) $-\frac{5}{3}$
- 7 If $X - 1 > 4$, then X may be =
 (a) 3 (b) 5 (c) 4 (d) 6
- 8 $(4 X^3)(- 3 X^2) = \dots\dots\dots$
 (a) $- 12 X^5$ (b) $12 X^5$ (c) $- 12 X^6$ (d) $12 X^6$
- 9 If $(X + 5)(X - 5) = X^2 - b$, then b =
 (a) - 25 (b) 25 (c) - 10 (d) 10

Second Group :

► Answer the following questions :

- 1 Simplify : $\sqrt[3]{\frac{125}{8}} \times \sqrt{\frac{4}{25}} + \left(\frac{5}{2}\right)^0$
- 2 Find the expansion of : $(X + 5)^2$
- 3 Find : $\frac{12 X^3 - 4 X^2 + 16 X}{4 X}$
- 4 Using a compass and ruler draw $\overline{AB}$ of length 6 cm. and bisect it at point C
- 5 In an experiment of rolling a fair die once , find the probability of each of the following events.
 [a] A the event of getting a number divisible by 2
 [b] B the event of getting a number greater than 5
 [c] C the event of getting a number less than 7
- 6 A bag contains 15 identical ball 3 of them are white and 9 of them are black the rest is red
 find the probability that drwn balls is :
 [a] balck ball. [b] red ball. [c] not black ball.
- 7 Draw $\triangle ABC$ where A (1 , 1) , B (2 , 4) , C (4 , 2) and its image by reflection in X-axis.



Answer the following questions :

First Group :

► **Choose the correct answer :**

- 1 $15x^3 \div 5x^3 = \dots\dots\dots$
 (a) 3 (b) $3x$ (c) $3x^2$ (d) $3x^6$
- 2 $\sqrt{(4)^2 + (3)^2} = 4 + \dots\dots\dots$
 (a) 3 (b) 1 (c) 2 (d) 4
- 3 The additive inverse of $(5)^2$ is $\dots\dots\dots$
 (a) 25 (b) -25 (c) -5 (d) $\frac{1}{25}$
- 4 $(-2)^7 \dots\dots\dots (-2)^6$
 (a) $<$ (b) $=$ (c) $>$ (d) otherwise
- 5 The area of the rhombus whose diagonal lengths are 6 cm. , 8 cm. is $\dots\dots\dots$ cm².
 (a) 49 (b) 14 (c) 28 (d) 24
- 6 The image of the point (3 , 5) by reflection on x -axis is $\dots\dots\dots$
 (a) $(-3 , 5)$ (b) $(3 , -5)$ (c) $(-3 , -5)$ (d) $(-5 , -3)$
- 7 The image of the point (3 , 5) by rotation R (O , 90) is $\dots\dots\dots$
 (a) $(3 , 5)$ (b) $(-5 , 3)$ (c) $(5 , -3)$ (d) $(-3 , -5)$
- 8 $4a^0 = \dots\dots\dots$
 (a) 4 (b) $4a$ (c) 1 (d) 0
- 9 If $x^3 = 64$, then $\sqrt{x} = \dots\dots\dots$
 (a) 4 (b) 8 (c) 2 (d) 16

Second Group :

► **Answer the following questions :**

- 1 Find the value of : $\frac{3^5 \times 3^4}{3^2 \times 3^2}$
- 2 If $a + 3b = 6$ and $c = 2$, then find the numerical value of $a + 3(b + c)$.
- 3 Find the S.S. in $\mathbb{Z}$: $(x + 3)^3 = 125$
- 4 Simplify to the simplest form : $(x - 5)(x + 5) + 25$, then find the numerical value of the result when $x = 2$

5 A bag contains cards numbered from 2 to 12 , if one of the cards is chosen randomly , find the probability that the chosen card carries :

[a] a perfect square. [b] an even prime number.

[c] a factor of the number 6

6 Draw the equilateral triangle ABC with a side length of 5 cm.

7 Draw the triangle ABC where A (- 6 , 1) , B (- 3 , 1) , C (- 4 , 3) , then draw the image of the triangle by translation 5 units to the right.



Damanhour Education
Directorate

El-Beheira Governorate



Answer the following questions :

First Group :

► Choose the correct answer :

1 If $39 \times 10^{-8} = k \times 10^{-7}$, what is the value of k ?

(a) 39 (b) 3.9 (c) 0.39 (d) 0.039

2 $x(x-1) + x = \dots\dots\dots$

(a) $x(2x-1)$ (b) $2x^2$ (c) x^2 (d) $x^2 - x$

3 $(x^3 + x^2) \div x^2 = \dots\dots\dots$

(a) zero (b) x (c) $x+1$ (d) $2x+1$

4 What is the image of the point (- 3 , 5) by reflection in x -axis followed by reflection in x -axis again ?

(a) (3 , - 5) (b) (- 3 , - 5) (c) (- 3 , 5) (d) (3 , 5)

5 Which of the following equals the third of the number 3^x ?

(a) 1^x (b) $\left(\frac{1}{3}\right)^x$ (c) 3^{x+1} (d) 3^{x-1}

6 If $-\sqrt[3]{25} = \sqrt[3]{y}$, then what is the value of y ?

(a) - 5 (b) 5 (c) - 125 (d) 125

7 What is the image of the point (5 , - 2) by translation 5 units in the negative direction of x -axis ?

(a) (5 , - 7) (b) (10 , - 2) (c) (0 , - 2) (d) (5 , - 3)

8 If $x + y = 15$ and $x - y = 5$, then what is the value of $x^2 - y^2$?

(a) 75 (b) 20 (c) 3 (d) 10

- 9 A rhombus its area = 20 square feet and the length of one of its diagonals = 5 feet , then what is the length of the other diagonal ?
- (a) 8 feet (b) 4 feet (c) 10 feet (d) 15 feet

Second Group :

► Answer the following questions :

- 1 Find in $\mathbb{Q}$ the solution set of the inequality : $5 - 3x \geq 14$
- 2 In the coordinate plane , draw $\triangle ABC$ where $A(-1, 2)$, $B(3, 1)$ and $C(0, 4)$, then draw its image by rotaion $R(O, 90^\circ)$
- 3 From the set of numbers $\{4, 5, 7\}$, form a number from two digits , write the sample space , then calculate the probability of the following events :
- [a] Event A which is (the sum of two digits = 9).
- [b] Event B which is (the tens digit of the number is an odd number).
- 4 Find in $\mathbb{Z}$ the solution set of the equation : $8x^3 - 15 = 49$
- 5 A card choosen randomly from some identical cards numbered from 2 up to 11. Write the simple space then find the following events.
- [a] Appearance of a number less than or equal 4
- [b] A perfect square number.
- 6 Find the value of b which makes the expression :
- $(4x^2 + 11x + b)$ is divisible by $(4x - 1)$
- 7 Draw $\triangle ABC$ where the length of $AB = 4$ cm. , $m(\angle B) = 90^\circ$ and the length of $BC = 3$ cm. , then draw the bisector of $\overline{AC}$ at point D. Is $BD = \frac{1}{2} AC$?

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Educational Administration
Official Language Schools

Beni Suf Governorate



Answer the following questions :

First Group :

► Choose the correct answer from those given :

- 1 Which of the following equals -2^4 ?
- (a) -8 (b) -6 (c) 16 (d) -16
- 2 If $2^4 \times a = 2^{20}$, what is the value of a ?
- (a) 2^{24} (b) 2^{16} (c) 2^5 (d) 2

- 3 If $35 \times 10^{-5} = y \times 10^{-4}$, what is the value of y ?
 (a) 35 (b) 3.5 (c) 0.35 (d) 350
- 4 $x(x-3) + x = \dots\dots\dots$
 (a) $x^2 - 3 + x$ (b) $x^2 - 4x$ (c) $x^2 - 2x$ (d) $x - 3$
- 5 If $(x+y)^2 = 26$ and $x^2 + y^2 = 20$, what is the value of xy ?
 (a) 3 (b) 6 (c) 9 (d) 12
- 6 $\dots\dots\dots \div (-3x^2y) = 4x^3y^3$
 (a) $12x^6y^3$ (b) $-12x^5y^4$ (c) $-7x^5y^3$ (d) $-7x^6y^3$
- 7 What is the image of the point $(4, -3)$ by reflection in the x -axis followed by reflection in the y -axis ?
 (a) $(-4, 3)$ (b) $(-4, -3)$ (c) $(-3, -4)$ (d) $(4, 3)$
- 8 What is the image of the point $(-2, 5)$ by the translation $(2, -5)$?
 (a) $(0, -10)$ (b) $(-4, -10)$ (c) $(4, 10)$ (d) $(0, 0)$
- 9 What rotation makes the image of the point $A(2, -6)$ become $\hat{A}(-6, -2)$?
 (a) $R(O, -90^\circ)$ (b) $R(O, 90^\circ)$ (c) $R(O, -180^\circ)$ (d) $R(O, 360^\circ)$

Second Group :

► Answer the following questions :

- 1 Simplify to its simplest form : $\sqrt{\frac{81}{49}} + \left(\frac{3}{4}\right)^2 + \sqrt[3]{\frac{125}{343}}$
- 2 Find the solution set in $\mathbb{Q}$ for the inequality : $2(x+5) > 16$
- 3 Find the quotient of : $(2x^2 + 13x + 15)$ divided by $(x+5)$
- 4 Which has a greater area ? A square with a diagonal length of 10 cm or a trapezium with the lengths of its parallel bases are 6 cm. and 8 cm. and its height 12 cm.
- 5 Draw $\triangle ABC$ where $AB = 7$ cm. , $BC = 4$ cm. , $CA = 5$ cm. , then determine by measuring the type of the triangle according to the measures of its angles.
- 6 In the experiment of rolling a fair die once and observing the number that appears on the upper face , write the sample space and then write each of the following events.
 [a] Event (C) is the event of getting the number 8
 [b] Event (F) is the event of getting a number divisible by 3
- 7 A bag contains 28 identical marbles. If hani randomly draws a marble and he finds that it is blue and the probability of drawing a blue marble is $\frac{3}{4}$, Find the number of blue marbles in the bag.



Answer the following questions : (Calculator is allowed)

First Group :

► **Choose the correct answer :**

- 1 If $(X + 4)(X - 4) = X^2 - b$, then $b = \dots\dots\dots$
 (a) 0 (b) 16 (c) 25 (d) - 16
- 2 If the area of a square is 50 cm^2 , then the length of its diagonal = $\dots\dots\dots$ cm.
 (a) 10 (b) 20 (c) 25 (d) 15
- 3 The image of the point $(0, 5)$ by translation $(X, y) \longrightarrow (X + 2, y - 3)$ is $\dots\dots\dots$
 (a) $(5, 0)$ (b) $(-5, 0)$ (c) $(2, 2)$ (d) $(0, -5)$
- 4 $(X^4 - X^3) \div X^3 = \dots\dots\dots$
 (a) 0 (b) $X + 1$ (c) $X - 1$ (d) $2X + 1$
- 5 If $6.3 \times 10^n = 0.000063$, then $n = \dots\dots\dots$
 (a) - 7 (b) - 6 (c) - 5 (d) - 8
- 6 $\sqrt{49} = \dots\dots\dots$
 (a) 7 (b) ± 7 (c) - 7 (d) 49
- 7 The image of the point $(-4, 2)$ under the rotation $R(O, 90^\circ)$ is $\dots\dots\dots$
 (a) $(-4, -2)$ (b) $(-2, 4)$ (c) $(2, 4)$ (d) $(-2, -4)$
- 8 $2^2 \times 2^3 = \dots\dots\dots$
 (a) 2^4 (b) 2^5 (c) 2^2 (d) 30
- 9 If $X \in \mathbb{Z}$, which of the following is a solution to the inequality : $1 + 2X < 3$?
 (a) 1 (b) zero (c) $\frac{3}{4}$ (d) - 1.5

Second Group :

► **Answer the following questions :**

- 1 Find in the simplest form the value of : $\frac{3^8 \times 3^{-5}}{3^4 \times 3^{-3}}$
- 2 Simplify the expression : $X + 3X(X + 2)$ to the simplest form, then find the numerical value when $X = -3$
- 3 Draw an angle of measure 80° , then bisect it using a ruler and compass.

- 4 Find the quotient of dividing : $(x^3 + x + 10)$ by $(x + 2)$.
- 5 Draw $\triangle ABC$ where A (0 , 2) , B (− 5 , 0) and C (− 3 , 6) , then draw the image of $\triangle ABC$ by a reflection in the y-axis.
- 6 A box contains 4 white balls and 5 are red balls. If all balls are a like and a ball is selected randomly from the box. Find the probability of selecting :
 [a] A red ball. [b] A yellow ball.
- 7 From the set of numbers $\{3 , 4 , 6 , 7\}$, form a 2-digits number with different digits.
 [a] Write the sample space.
 [b] write the event (A) is the event of “the tens digit is odd”.

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Directorate of Education
Math Supervision

Souhag Governorate



Answer the following questions : (Calculator is permitted)

First Group :

► Choose the correct answer :

- 1 If $x = 2^3$, then the value of $\sqrt[3]{x} = \dots\dots\dots$
 (a) 3 (b) 2 (c) 4 (d) 8
- 2 $\sqrt{25} + \sqrt[3]{-27} = \dots\dots\dots$
 (a) 2 (b) 8 (c) 5 (d) 10
- 3 Which of the following equals 73000000 ?
 (a) 7.3×10^6 (b) 7.3×10^7 (c) 7.3×10^{-7} (d) 7.3×10^{-6}
- 4 If $x - 1 < 2$, which of the following could be the value of x ?
 (a) 2 (b) 3 (c) 5 (d) 8
- 5 $(-3x^2)(-2x^3) = \dots\dots\dots$
 (a) $-6x^5$ (b) $6x$ (c) $-6x^6$ (d) $6x^5$
- 6 If $(x - 5)(x - 2) = x^2 + bx + c$, then $b = \dots\dots\dots$
 (a) 10 (b) - 10 (c) - 7 (d) 7
- 7 A square with a diagonal length 10 cm. , then its area = $\dots\dots\dots \text{cm}^2$
 (a) 25 (b) 100 (c) 50 (d) 180
- 8 A trapezium with a height of 4 cm. and a middle base length of 10 cm.
 , its area = $\dots\dots\dots \text{cm}^2$
 (a) 10 (b) 40 (c) 20 (d) 60
- 9 The image of the point (4 , 5) by the translation (− 2 , 2) is the point $\dots\dots\dots$
 (a) (6 , 7) (b) (− 6 , − 3) (c) (6 , 3) (d) (2 , 7)

► **Answer the following questions :**

- 1 Simplify :** $\sqrt{\frac{36}{25}} \times (\frac{2}{3})^0 \times {}^3\sqrt{\frac{125}{216}}$
- 2 Find the solution set in $\mathbb{Z}$ for the inequality : $2(x - 3) > 4$**
- 3 Find the quotient of :** $\frac{24x^4 + 15x^3 + 12x^2}{3x^2}$
- 4 Draw an angle of measure 80° , then bisect it using the ruler and the compass.**
- 5 In the experiment of rolling a fair die once , find the probability of each of the following events :**
[a] A the event of getting an even number.
[b] B the event of getting a number smaller than 6
[c] C the event of getting a number divisible by 3
- 6 A bag contains 5 red ball , 3 blue balls , and 7 green balls , all of balls are identical. If a ball is drawn randomly from the bag , what is the probability that the drawn ball is :**
[a] red ? **[b]** green ? **[c]** not blue ?
- 7 Draw the triangle ABC where : A (1 , 1) , B (1 , 3) , C (4 , 0) , then draw its image under the rotation R (O , -90°).**

20

Kom Ombo & Nasr Nuba
Math Supervision

Aswan Governorate



Answer the following questions :

First Group :

► Choose the correct answer :

- 1** $\sqrt{9} - \sqrt[3]{27} = \dots\dots\dots$
- (a) 0 (b) 9 (c) 27 (d) 6
- 2** $16x^3y^3 = (8xy^2)(\dots\dots\dots)$
- (a) $2y$ (b) $2xy$ (c) $2x^2y$ (d) $2xy^2$
- 3** The area of a square is 50 cm^2 , then the length of its diagonal is $\dots\dots\dots\text{ cm}$.
- (a) 5 (b) 10 (c) 15 (d) 25
- 4** The multiplicative inverse of 5^{-2} is $\dots\dots\dots$
- (a) 5^2 (b) $\frac{1}{5^2}$ (c) 5^{-2} (d) -5^{-2}

- 5 If $(X - 4)(X + 4) - 9 = 0$, where $X < 0$, what is the value of X ?
- (a) 5 (b) -9 (c) 16 (d) -5
- 6 The image of the point $(-3, 4)$ under the rotation $R(O, 90^\circ)$ is the point
- (a) $(3, 4)$ (b) $(3, -4)$ (c) $(-4, -3)$ (d) $(-3, 4)$
- 7 A rhombus with a perimeter of 20 cm. and a height of 9 cm., its area is cm^2
- (a) 45 (b) 90 (c) 22.5 (d) 180
- 8 Which of the following numbers is written in scientific form?
- (a) 0.6×10^{54} (b) 32.1×10^7 (c) 5×2^{10} (d) 5×10^{-4}
- 9 The solution set of the inequality : $2X - 1 \leq 0$ in $\mathbb{N}$ is
- (a) $\emptyset$ (b) $\{0, 1\}$ (c) $\{0\}$ (d) $\{2, 0\}$

Second Group :

► Answer the following questions :

- 1 Simplify to the simplest form : $\sqrt[3]{\frac{64}{125}} \times \sqrt{\frac{25}{16}} \times \left(\frac{-2}{9}\right)^0$
- 2 If $(X - y) = 5$, $(X + y) = 7$, calculate the value of : $4X^2 - 4y^2$
- 3 Divide : $(2X^2 + 13X + 15)$ by $(X + 5)$, then find the numerical value of the quotient when $X = -2$
- 4 From the set of numbers $\{1, 2, 3\}$, form a two-digit number. What is the probability of each of the following events :
- [a] The sum of the two digits is 5
- [b] The ones digit equals the tens digit.
- 5 Draw the triangle ABC in which : $AB = 3 \text{ cm.}$, $BC = 4 \text{ cm.}$, $AC = 5 \text{ cm.}$ and determine the type of triangle based on its angle measures using measurements.
- The type of a triangle is
- 6 A bag contains 30 identical red and green balls, the probability of drawing a green balls is $\frac{2}{5}$. Find the number of red balls in the bag.
- 7 Draw the triangle whose vertices are the points A $(4, 2)$, B $(0, 6)$, C $(1, 1)$, and then draw its image by reflection in the y-axis.

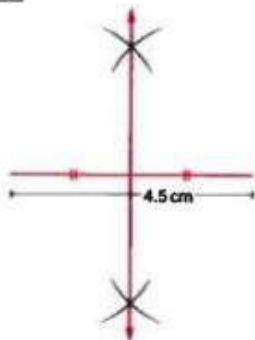
Answers of Final Assessment

First Group :

- 1 c 2 d 3 a 4 a 5 c
 6 c 7 a 8 a 9 b

Second Group :

1



$$2 \left(\frac{14}{15} \right)^0 - \sqrt{\frac{9}{25}} + \sqrt[3]{\frac{64}{125}} = 1 - \frac{3}{5} + \frac{4}{5} = \frac{6}{5} = 1 \frac{1}{5}$$

3

$$\begin{array}{r}
 \\
 X^2 - 5X \\
 \hline
 X+5 \quad \overline{X^3 - 25X} \\
 \quad \ominus X^3 \oplus 5X^2 \\
 \hline
 - 5X^2 - 25X \\
 \quad \oplus 5X^2 \oplus 25X \\
 \hline
 0 0
 \end{array}$$

$$\therefore X^2 - 5X = X^2 + aX \quad \therefore a = -5$$

$$\begin{aligned}
 4 \quad (4n-3)^2 - (4n-3)(4n+3) \\
 = 16n^2 - 24n + 9 - (16n^2 - 9) \\
 = 16n^2 - 24n + 9 - 16n^2 + 9 = -24n + 18
 \end{aligned}$$

The numerical value of the result when $n = -1$:

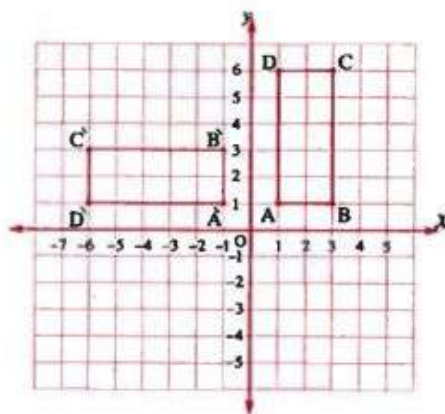
$$-24(-1) + 18 = 24 + 18 = 42$$

$$5 \quad A(1, 1) \xrightarrow{R(O, 90^\circ)} \hat{A}(-1, 1)$$

$$B(3, 1) \xrightarrow{R(O, 90^\circ)} \hat{B}(-1, 3)$$

$$C(3, 6) \xrightarrow{R(O, 90^\circ)} \hat{C}(-6, 3)$$

$$D(1, 6) \xrightarrow{R(O, 90^\circ)} \hat{D}(-6, 1)$$



$$6 \quad \because 3X - 2 \leq 4 \quad \therefore 3X \leq 4 + 2$$

$$\therefore 3X \leq 6$$

$$\therefore X \leq \frac{6}{3}$$

$$\therefore X \leq 2$$

$$\therefore \text{The solution set} = \{2, 1, 0\}$$

$$7 \quad (A) \frac{4}{6} = \frac{2}{3}$$

$$(B) \frac{2}{6} = \frac{1}{3}$$

1 Cairo

First Group :

- 1 d 2 a 3 c 4 b 5 a
6 d 7 d 8 b 9 a

Second Group :

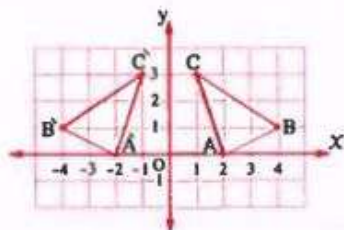
- 1 $(2.5 \times 10^{-6}) \times (6 \times 10^{-12})$
 $= (2.5 \times 6) \times (10^{-6} \times 10^{-12})$
 $= 15 \times 10^{-18} = 1.5 \times 10^{-17}$
- 2 $(x-2)(x^2-3x+5)$
 $= x^3 - 3x^2 + 5x - 2x^2 + 6x - 10$
 $= x^3 - 5x^2 + 11x - 10$

3 $\frac{x^5}{x^5} + \frac{x^4}{x^2} - \frac{x^2}{x^2} = 1 + x^2 - 1 = x^2$

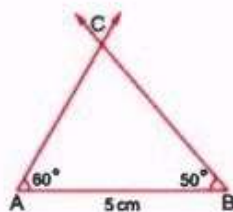
When $x = 2$:

$\therefore x^2 = (2)^2 = 4$

- 4 A (2, 0) $\xrightarrow[\text{the y-axis}]{\text{by reflection in}}$ A' (-2, 0)
 B (4, 1) $\xrightarrow[\text{the y-axis}]{\text{by reflection in}}$ B' (-4, 1)
 C (1, 3) $\xrightarrow[\text{the y-axis}]{\text{by reflection in}}$ C' (-1, 3)



5



From the drawing, the triangle is scalene.

- 6 [a] $\frac{4}{6} = \frac{2}{3}$ [b] $\frac{2}{6} = \frac{1}{3}$
 7 $\frac{27}{50}$

2 Cairo

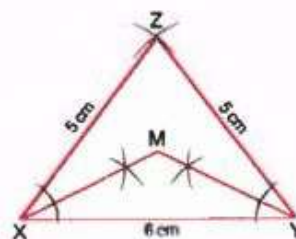
First Group :

- 1 d 2 a 3 a 4 d 5 d
6 c 7 a 8 a 9 b

Second Group :

- 1 $\therefore 3x^3 - 3 = 2x^3 + 5$
 $\therefore 3x^3 - 2x^3 = 5 + 3$
 $\therefore x^3 = 8$ $\therefore x = \sqrt[3]{8} = 2$
 $\therefore$ The solution set = $\{2\}$

2



Yes, $MY = MX$

3

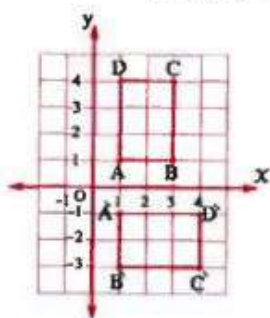
$$\begin{array}{r} 5x - 6 \\ x + 2 \overline{) 5x^2 + 4x - 12} \\ \underline{5x^2 + 10x} \\ -6x - 12 \\ \underline{+ 6x + 12} \\ 0 \\ 0 \end{array}$$

$\therefore$ The other factor is : $5x - 6$

- 4 $(x+2y)(x-2y) + (x+y)^2$
 $= x^2 - 4y^2 + x^2 + 2xy + y^2$
 $= 2x^2 + 2xy - 3y^2$
- 5 [a] $P(A) = \frac{1}{4}$ [b] $P(B) = \frac{3}{4}$
- 6 [a] $P(A) = \frac{5}{20} = \frac{1}{4}$
 [b] $P(B) = \frac{6}{20} = \frac{3}{10}$

- 7 A (1, 1) $\xrightarrow{R(O, -90^\circ)}$ A' (1, -1)
 B (3, 1) $\xrightarrow{R(O, -90^\circ)}$ B' (1, -3)
 C (3, 4) $\xrightarrow{R(O, -90^\circ)}$ C' (4, -3)

$$D(1, 4) \xrightarrow{R(O, -90^\circ)} \hat{D}(4, -1)$$



3

Cairo

First Group :

- 1 d 2 b 3 a 4 c 5 d
 6 c 7 b 8 b 9 b

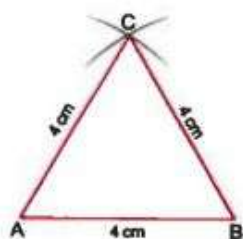
Second Group :

$$1 \sqrt{\frac{9}{4}} + \sqrt[3]{\frac{-27}{8}} + \left(\frac{4}{9}\right)^0 = \frac{3}{2} - \frac{3}{2} + 1 = 1$$

$$2 \frac{x \times x^6 \times x^{-2}}{x^{-3} \times x^8} = \frac{x^{1+6-2}}{x^{-3+8}} = \frac{x^5}{x^5} = x^{5-5} = x^0 = 1$$

$$3 [a] \frac{6}{10} = \frac{3}{5} \quad [b] \frac{1}{10} \quad [c] \frac{6+3}{10} = \frac{9}{10}$$

4



$$5 \therefore 3x - 5 < 4$$

$$\therefore 3x < 4 + 5 \quad \therefore 3x < 9$$

$$\therefore x < \frac{9}{3} \quad \therefore x < 3$$

$$\therefore \text{The solution set} = \{x : x \in \mathbb{Q}, x < 3\}$$

$$6 A(2, 4) \xrightarrow{\text{by reflection in the } x\text{-axis}} \hat{A}(2, -4)$$

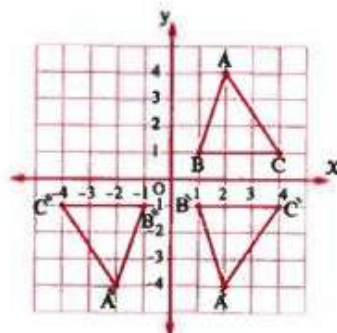
$$\xrightarrow{\text{by reflection in the } y\text{-axis}} \hat{\hat{A}}(-2, -4)$$

$$B(1, 1) \xrightarrow{\text{by reflection in the } x\text{-axis}} \hat{B}(1, -1)$$

$$\xrightarrow{\text{by reflection in the } y\text{-axis}} \hat{\hat{B}}(-1, -1)$$

$$C(4, 1) \xrightarrow{\text{by reflection in the } x\text{-axis}} \hat{C}(4, -1)$$

$$\xrightarrow{\text{by reflection in the } y\text{-axis}} \hat{\hat{C}}(-4, -1)$$



$$7 [a] \frac{4}{6} = \frac{2}{3} \quad [b] \frac{2}{6} = \frac{1}{3}$$

4

Giza

First Group :

- 1 a 2 b 3 a 4 a 5 c
 6 a 7 b 8 b 9 a

Second Group :

$$1 \sqrt[3]{\frac{125}{27}} \times \sqrt{\frac{81}{25}} \times \left(\frac{4}{9}\right)^0 = \frac{5}{3} \times \frac{9}{5} \times 1 = 3$$

$$2 \therefore 5x + 1 < 2(x + 2)$$

$$\therefore 5x + 1 < 2x + 4 \quad \therefore 5x - 2x < 4 - 1$$

$$\therefore 3x < 3 \quad \therefore x < \frac{3}{3}$$

$$\therefore x < 1$$

$$\therefore \text{The solution set} = \{0, -1, -2, \dots\}$$

$$3 (3a + 5)^2 = 9a^2 + 30a + 25$$

$$4 [a] A = \{1, 2, 3\}$$

$$[b] B = \{1, 3, 5, 7, 9\}$$

$$[c] C = \{5, 10\}$$

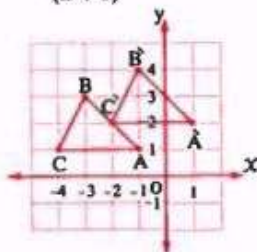
$$5 A = \frac{1}{2} (7 + 9) \times 5 = \frac{1}{2} \times 16 \times 5 = 40 \text{ cm}^2$$

$$6 [a] \frac{5}{15} = \frac{1}{3} \quad [b] \frac{10}{15} = \frac{2}{3} \quad [c] \frac{0}{15} = 0$$

$$[7] A(-1, 1) \xrightarrow[(2, 1)]{\text{by translation}} \hat{A}(1, 2)$$

$$B(-3, 3) \xrightarrow[(2, 1)]{\text{by translation}} \hat{B}(-1, 4)$$

$$C(-4, 1) \xrightarrow[(2, 1)]{\text{by translation}} \hat{C}(-2, 2)$$



5

Giza

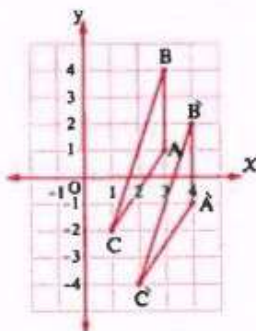
First Group :

- [1] b [2] b [3] a [4] d [5] c
[6] b [7] b [8] a [9] c

Second Group :

$$[1] \because 2x^2 + 1 = 33 \\ \therefore 2x^2 = 33 - 1 = 32 \\ \therefore x^2 = \frac{32}{2} = 16 \quad \therefore x = \pm 4 \\ \therefore \text{The solution set} = \{-4, 4\}$$

$$[2] A(3, 1) \xrightarrow[(1, -2)]{\text{by translation}} \hat{A}(4, -1) \\ B(3, 4) \xrightarrow[(1, -2)]{\text{by translation}} \hat{B}(4, 2) \\ C(1, -2) \xrightarrow[(1, -2)]{\text{by translation}} \hat{C}(2, -4)$$



$$[3] (2x + 5)(2x - 5) + 25 \\ = 4x^2 - 25 + 25 = 4x^2 \\ \text{When } x = -1 : \therefore 4x^2 = 4(-1)^2 = 4$$

$$[4] \because 2(x + 5) - 3 < 12 \quad \therefore 2x + 10 - 3 < 12 \\ \therefore 2x + 7 < 12 \quad \therefore 2x < 12 - 7 \\ \therefore 2x < 5 \quad \therefore x < \frac{5}{2} \\ \therefore \text{The solution set} = \{x : x \in \mathbb{Q}, x < \frac{5}{2}\}$$

$$[5] \because A = \frac{1}{2}(b_1 + b_2) \times h \\ \therefore 175 = \frac{1}{2}(14 + 21) \times h \text{ (multiplying by 2)} \\ \therefore 350 = 35h \quad \therefore h = \frac{350}{35} = 10 \text{ cm.}$$

$$[6] [a] \frac{3}{10} \quad [b] \frac{4}{10} = \frac{2}{5} \quad [c] \text{ zero}$$

$$[7] [a] P(A) = \frac{3}{6} = \frac{1}{2} \quad [b] P(B) = \frac{2}{6} = \frac{1}{3} \\ [c] P(C) = \frac{0}{6} = \text{zero}$$

6

Alexandria

First Group :

- [1] b [2] a [3] c [4] a [5] c
[6] b [7] d [8] a [9] c

Second Group :

$$[1] \sqrt{\frac{81}{49}} + \left(\frac{-3}{5}\right)^0 + \sqrt[3]{\frac{125}{343}} = \frac{9}{7} + 1 + \frac{5}{7} \\ = \frac{14}{7} + 1 = 2 + 1 = 3$$

$$[2] [a] P(A) = \frac{3}{6} = \frac{1}{2}$$

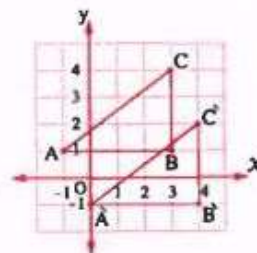
$$[b] P(B) = \frac{2}{6} = \frac{1}{3}$$

$$[3] [a] \frac{4}{15} \quad [b] \frac{10}{15} = \frac{2}{3} \quad [c] \frac{11}{15}$$

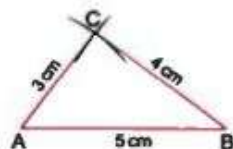
$$[4] A(-1, 1) \xrightarrow[(1, -2)]{\text{by translation}} \hat{A}(0, -1)$$

$$B(3, 1) \xrightarrow[(1, -2)]{\text{by translation}} \hat{B}(4, -1)$$

$$C(3, 4) \xrightarrow[(1, -2)]{\text{by translation}} \hat{C}(4, 2)$$



5



6 $(2x+5)^2 = 4x^2 + 20x + 25$

7 $\frac{-2x^2y + 4xy^2 - 6xy}{-2xy} = x - 2y + 3$

7

Alexandria

First Group :

- 1 b 2 c 3 a 4 b 5 d
6 b 7 a 8 c 9 b

Second Group :

1 $\therefore 2x + 5 \leq 11$

$\therefore 2x \leq 11 - 5 \quad \therefore 2x \leq 6$

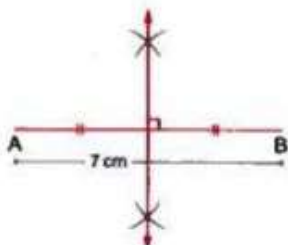
$\therefore x \leq \frac{6}{2} \quad \therefore x \leq 3$

$\therefore$ The solution set = $\{3, 2, 1, 0, -1, \dots\}$

2 $(2x+3)(2x-3) + 9 = 4x^2 - 9 + 9 = 4x^2$

The numerical value = $4 \times (-1)^2 = 4$

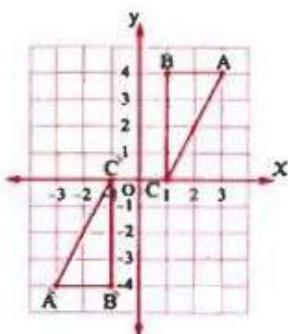
3



4 $A(3, 4) \xrightarrow{R(O, 180^\circ)} \hat{A}(-3, -4)$

$B(1, 4) \xrightarrow{R(O, 180^\circ)} \hat{B}(-1, -4)$

$C(1, 0) \xrightarrow{R(O, 180^\circ)} \hat{C}(-1, 0)$



5 $\sqrt[3]{\frac{-125}{64}} \times \sqrt{\frac{16}{25}} + \left(\frac{4}{5}\right)^0 = -\frac{5}{4} \times \frac{4}{5} + 1$
 $= -1 + 1 = 0$

6 $\frac{x^{-6} \times x^2}{x^{-4} \times x^{-3}} = \frac{x^{-6+2}}{x^{-4-3}} = \frac{x^{-4}}{x^{-7}} = x^{-4+7} = x^3$

The numerical value = $(2)^3 = 8$

7 [a] $\frac{2}{10} = \frac{1}{5}$ [b] $\frac{5}{10} = \frac{1}{2}$ [c] $\frac{7}{10}$

8

El-Kalyoubia

First Group :

- 1 b 2 a 3 a 4 b 5 b
6 b 7 a 8 d 9 c

Second Group :

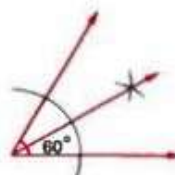
1 $\frac{(-a)^3 \times a^5 \times a^2}{(-a) \times a^4 \times a^3} = \frac{-a^{3+5+2}}{-a^{1+4+3}} = \frac{a^{10}}{a^8} = a^{10-8} = a^2$

2 $\therefore 2x - 3 > x - 1$

$\therefore 2x - x > -1 + 3 \quad \therefore x > 2$

$\therefore$ The solution set = $\{3, 4, 5, \dots\}$

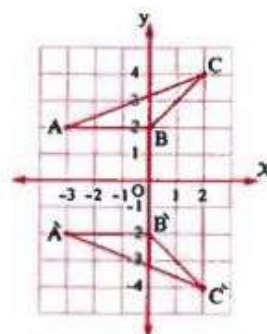
3



4 $A(-3, 2) \xrightarrow{\text{by reflection in the X-axis}} \hat{A}(-3, -2)$

$B(0, 2) \xrightarrow{\text{by reflection in the X-axis}} \hat{B}(0, -2)$

$C(2, 4) \xrightarrow{\text{by reflection in the X-axis}} \hat{C}(2, -4)$



$$\begin{array}{r}
 \text{5} \quad \begin{array}{r}
 \overline{X-1} \\
 X-4 \overline{X^2-5X+4} \\
 \underline{\ominus \oplus} \\
 X^2-4X \\
 \underline{ -X+4} \\
 \oplus \ominus \\
 -X+4 \\
 \underline{ 0 }
 \end{array}
 \end{array}$$

$\therefore$ The other factor is : $X-1$

$$\text{6} \quad S = \{(H, H), (H, T), (T, H), (T, T)\}$$

The number of its elements is 4

$$\text{7} \quad \text{[a]} \frac{5}{20} = \frac{1}{4} \quad \text{[b]} \frac{8}{20} = \frac{2}{5} \quad \text{[c]} \frac{15}{20} = \frac{3}{4}$$

9 El-Sharkia

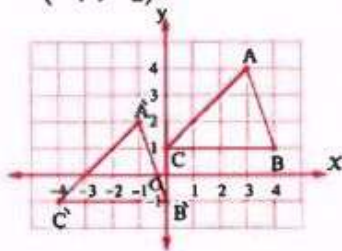
First Group :

- 1 b 2 c 3 b 4 d 5 a
6 b 7 b 8 b 9 c

Second Group :

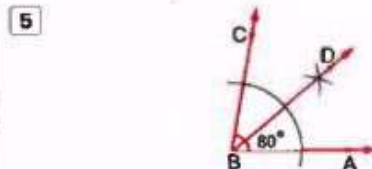
$$\begin{array}{ll}
 \text{1} \quad \text{[a]} \frac{1}{2} & \text{[b]} \frac{1}{2} \\
 \text{2} \quad \therefore (2X-3)(2X+3) = 7 \\
 \therefore 4X^2 - 9 = 7 & \therefore 4X^2 = 7 + 9 \\
 \therefore 4X^2 = 16 & \therefore X^2 = 4 \quad \therefore X = \pm 2
 \end{array}$$

$$\begin{array}{l}
 \text{3} \quad A(3, 4) \xrightarrow[(-4, -2)]{\text{by translation}} \hat{A}(-1, 2) \\
 B(4, 1) \xrightarrow[(-4, -2)]{\text{by translation}} \hat{B}(0, -1) \\
 C(0, 1) \xrightarrow[(-4, -2)]{\text{by translation}} \hat{C}(-4, -1)
 \end{array}$$



$$\begin{array}{r}
 \text{4} \quad \begin{array}{r}
 \overline{X+3} \\
 X-5 \overline{X^2-2X-15} \\
 \underline{\ominus \oplus} \\
 X^2-5X \\
 \underline{ 3X-15} \\
 \ominus \oplus \\
 3X-15 \\
 \underline{ 0 }
 \end{array}
 \end{array}$$

$\therefore$ The quotient = $X+3$



$$\begin{array}{ll}
 \text{5} & \\
 \text{6} \quad \therefore 2X-9 \leq 5 & \\
 \therefore 2X \leq 5+9 & \therefore 2X \leq 14 \\
 \therefore X \leq \frac{14}{2} & \therefore X \leq 7 \\
 \therefore \text{The solution set} = \{7, 6, 5, \dots\}
 \end{array}$$

$$\text{7} \quad \text{[a]} \frac{5}{10} = \frac{1}{2} \quad \text{[b]} \frac{2}{10} = \frac{1}{5}$$

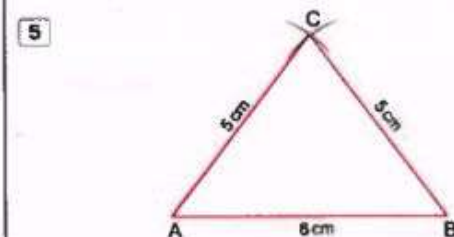
10 El-Monofia

First Group :

- 1 b 2 b 3 b 4 c 5 c
6 a 7 a 8 c 9 b

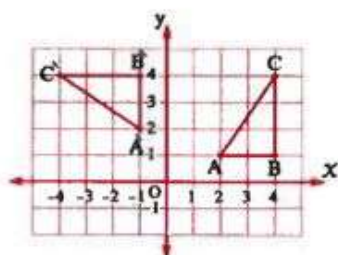
Second Group :

$$\begin{array}{ll}
 \text{1} \quad (3X+2)(3X-2) + (X+2)^2 & \\
 = 9X^2 - 4 + X^2 + 4X + 4 = 10X^2 + 4X & \\
 \text{2} \quad \sqrt{\frac{25}{4}} \times \left(-\frac{2}{9}\right)^0 \times \left(-\frac{2}{5}\right)^2 = \frac{5}{2} \times 1 \times \frac{4}{25} = \frac{2}{5} & \\
 \text{3} \quad \text{[a]} \frac{5}{15} = \frac{1}{3} & \text{[b]} \frac{3}{15} = \frac{1}{5} \quad \text{[c]} \frac{12}{15} = \frac{4}{5} \\
 \text{4} \quad \therefore 4(3X-2) > 2(2X+1) & \\
 \therefore 12X-8 > 4X+2 & \\
 \therefore 12X-4X > 2+8 & \therefore 8X > 10 \\
 \therefore X > \frac{10}{8} & \therefore X > \frac{5}{4} \\
 \text{The solution set} = \{X : X \in \mathbb{Q}, X > \frac{5}{4}\}
 \end{array}$$



$$\begin{array}{ll}
 \text{5} & \\
 \text{6} \quad S = \{1, 2, 3, 4, 5, 6\} & \\
 \text{[a]} \frac{3}{6} = \frac{1}{2} & \text{[b]} \frac{1}{6} \\
 \text{7} \quad A(2, 1) \xrightarrow{R(O, 90^\circ)} \hat{A}(-1, 2) & \\
 B(4, 1) \xrightarrow{R(O, 90^\circ)} \hat{B}(-1, 4) &
 \end{array}$$

$$C(4, 4) \xrightarrow{R(O, 90^\circ)} \hat{C}(-4, 4)$$



11 El-Gharbia

First Group :

1 c 2 a 3 b 4 c 5 d

6 b 7 d 8 c 9 d

Second Group :

$$\begin{aligned} 1 \quad \frac{2^5 \times 7^4 \times 10^7}{2^3 \times 10^6 \times 7^3} &= 2^{5-3} \times 7^{4-3} \times 10^{7-6} \\ &= 2^2 \times 7 \times 10 = 4 \times 7 \times 10 = 280 \end{aligned}$$

2 $\because 3x - 2 \leq 4$

$$\therefore 3x \leq 4 + 2 \quad \therefore 3x \leq 6$$

$$\therefore x \leq \frac{6}{3} \quad \therefore x \leq 3$$

$$\therefore \text{The solution set} = \{3, 2, 1, 0\}$$

3 $\because A = \frac{1}{2}(b_1 + b_2) \times h$

$$\therefore 72 = \frac{1}{2}(6 + x) \times 9$$

$$\therefore 144 = (6 + x) \times 9$$

$$\therefore \frac{144}{9} = 6 + x \quad \therefore 16 = 6 + x$$

$$\therefore x = 16 - 6 \quad \therefore x = 10$$

4 [a] $P(A) = \frac{3}{6} = \frac{1}{2}$

[b] $P(B) = \frac{2}{6} = \frac{1}{3}$

[c] $P(C) = \frac{0}{6} = 0$

5 $(4x - 3)(4x + 3) + 9 = 16x^2 - 9 + 9 = 16x^2$

At $x = 2$:

$$\text{The result} = 16 \times (2)^2 = 16 \times 4 = 64$$

8 [a] $S = \{(H, H), (H, T), (T, H), (T, T)\}$

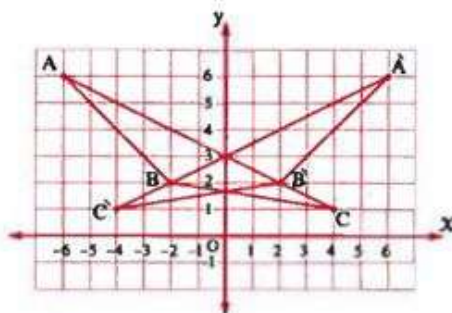
[b] $A = \{(H, T), (T, H)\}$

[c] $B = \{(H, H), (T, T)\}$

7 $A(-6, 6) \xrightarrow{\text{by reflection in the y-axis}} \hat{A}(6, 6)$

$B(-2, 2) \xrightarrow{\text{by reflection in the y-axis}} \hat{B}(2, 2)$

$C(4, 1) \xrightarrow{\text{by reflection in the y-axis}} \hat{C}(-4, 1)$



12 El-Dakahlia

First Question :

[a] 1 c 2 b 3 a

$$\begin{aligned} [b] \sqrt{\frac{49}{25}} + \left(\frac{3}{4}\right)^0 + \sqrt[3]{\frac{512}{125}} &= \frac{7}{5} + 1 + \frac{8}{5} \\ &= \frac{15}{5} + 1 = 3 + 1 = 4 \end{aligned}$$

Second Question :

[a] $\frac{4ab^3 - 16a^3b + 20a^2b^2}{4ab} = b^2 - 4a^2 + 5ab$

[b] 1 b 2 a 3 d

Third Question :

[a] 1 a 2 b 3 b

[b] The area of the trapezium $= 7 \times 10 = 70 \text{ cm}^2$

Forth Question :

[a] 1 $\frac{8}{17}$ 2 $\frac{11}{17}$ 3 $\frac{0}{17} = 0$

[b] $\because 3x - 5 \leq 7$

$$\therefore 3x \leq 7 + 5 \quad \therefore 3x \leq 12$$

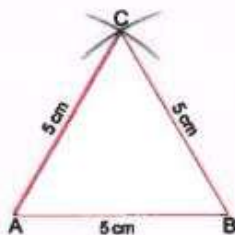
$$\therefore x \leq \frac{12}{3} \quad \therefore x \leq 4$$

$$\therefore \text{The solution set} = \{4, 3, 2, 1, 0\}$$

Fifth Question :

[a] ① $\frac{3}{6} = \frac{1}{2}$ ② $\frac{1}{6}$ ③ $\frac{2}{6} = \frac{1}{3}$

[b]



13 Ismailia

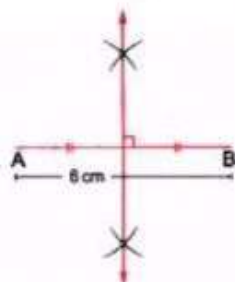
First Group :

- ① b ② c ③ d ④ a ⑤ b
⑥ c ⑦ d ⑧ a ⑨ b

Second Group :

① $\because x^3 - 1 = 7$
 $\therefore x^3 = 8$ $\therefore x = 2$
 $\therefore$ The solution set = $\{2\}$

②



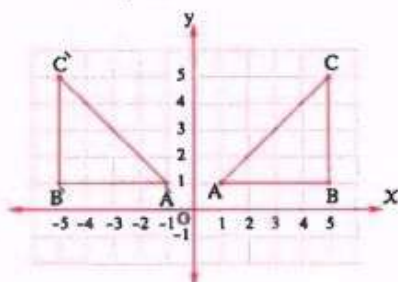
③ $(2x + 5)(x + 3) = 2x^2 + 11x + 15$

④ [a] $\frac{3}{6} = \frac{1}{2}$ [b] $\frac{2}{6} = \frac{1}{3}$ [c] $\frac{1}{6}$

⑤ A (1, 1) $\xrightarrow{\text{by reflection in the y-axis}}$ $\hat{A}(-1, 1)$

B (5, 1) $\xrightarrow{\text{by reflection in the y-axis}}$ $\hat{B}(-5, 1)$

C (5, 5) $\xrightarrow{\text{by reflection in the y-axis}}$ $\hat{C}(-5, 5)$



⑥ $\frac{15x^3y^4 + 20x^4y^3 - 25x^2y^2}{5x^2y^2} = 3xy^2 + 4x^2y - 5$

⑦ [a] $\frac{5}{10} = \frac{1}{2}$ [b] $\frac{7}{10}$ [c] $\frac{0}{10} = 0$

14 Suez

First Group :

- ① b ② c ③ a ④ a ⑤ c
⑥ b ⑦ d ⑧ a ⑨ b

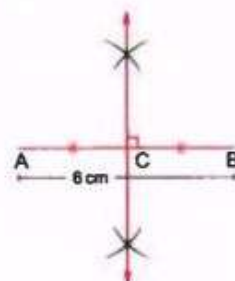
Second Group :

① $\sqrt[3]{\frac{125}{8}} \times \sqrt{\frac{4}{25}} + \left(\frac{5}{2}\right)^0 = \frac{5}{2} \times \frac{2}{5} + 1 = 1 + 1 = 2$

② $(x + 5)^2 = x^2 + 10x + 25$

③ $\frac{12x^3 - 4x^2 + 16x}{4x} = 3x^2 - x + 4$

④



⑤ [a] $P(A) = \frac{3}{6} = \frac{1}{2}$ [b] $P(B) = \frac{1}{6}$
[c] $P(C) = \frac{6}{6} = 1$

⑥ [a] $\frac{9}{15} = \frac{3}{5}$

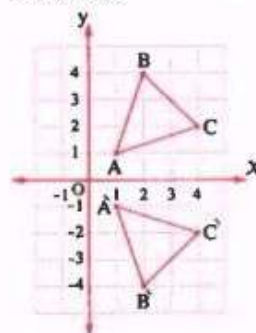
[b] The number of red balls = $15 - (3 + 9) = 3$, $\frac{3}{15} = \frac{1}{5}$

[c] $\frac{6}{15} = \frac{2}{5}$

⑦ A (1, 1) $\xrightarrow{\text{by reflection in the X-axis}}$ $\hat{A}(1, -1)$

B (2, 4) $\xrightarrow{\text{by reflection in the X-axis}}$ $\hat{B}(2, -4)$

C (4, 2) $\xrightarrow{\text{by reflection in the X-axis}}$ $\hat{C}(4, -2)$



15 Kafr El-Sheikh

First Group :

- 1 a 2 b 3 b 4 a 5 d
6 b 7 b 8 a 9 c

Second Group :

$$1 \quad \frac{3^5 \times 3^4}{3^2 \times 3^2} = \frac{3^{5+4}}{3^{2+2}} = \frac{3^9}{3^4} = 3^{9-4} = 3^5 = 243$$

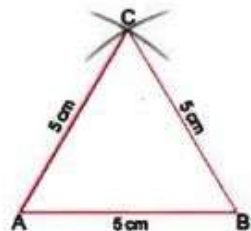
$$2 \quad a + 3(b + c) = a + 3b + 3c \\ = (a + 3b) + 3c = 6 + 3 \times 2 \\ = 6 + 6 = 12$$

$$3 \quad \because (x + 3)^3 = 125 \\ \therefore x + 3 = \sqrt[3]{125} = 5 \\ \therefore x = 5 - 3 \quad \therefore x = 2 \\ \therefore \text{The solution set} = \{2\}$$

$$4 \quad (x - 5)(x + 5) + 25 = x^2 - 25 + 25 = x^2 \\ \text{The numerical value} = (2)^2 = 4$$

$$5 \quad [a] \frac{2}{11} \quad [b] \frac{1}{11} \quad [c] \frac{3}{11}$$

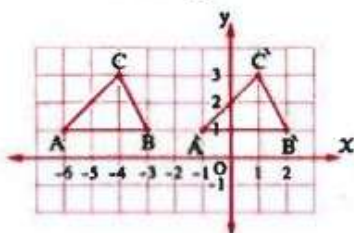
6



$$7 \quad A(-6, 1) \xrightarrow[\text{to the right}]{\text{by translation 5 units}} \hat{A}(-1, 1)$$

$$B(-3, 1) \xrightarrow[\text{to the right}]{\text{by translation 5 units}} \hat{B}(2, 1)$$

$$C(-4, 3) \xrightarrow[\text{to the right}]{\text{by translation 5 units}} \hat{C}(1, 3)$$



16 EL-Beheira

First Group :

- 1 b 2 c 3 c 4 c 5 d
6 c 7 c 8 a 9 a

Second Group :

$$1 \quad \because 5 - 3x \geq 14$$

$$\therefore -3x \geq 14 - 5 \quad \therefore -3x \geq 9$$

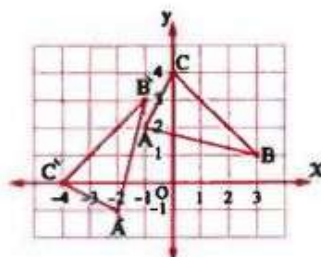
$$\therefore x \leq \frac{9}{-3} \quad \therefore x \leq -3$$

$$\therefore \text{The solution set} = \{x : x \in \mathbb{Q}, x \leq -3\}$$

$$2 \quad A(-1, 2) \xrightarrow{R(O, 90^\circ)} \hat{A}(-2, -1)$$

$$B(3, 1) \xrightarrow{R(O, 90^\circ)} \hat{B}(-1, 3)$$

$$C(0, 4) \xrightarrow{R(O, 90^\circ)} \hat{C}(-4, 0)$$



$$3 \quad S = \{44, 45, 47, 54, 55, 57, 74, 75, 77\}$$

$$[a] P(A) = \frac{2}{9} \quad [b] P(B) = \frac{6}{9} = \frac{2}{3}$$

$$4 \quad \because 8x^3 - 15 = 49$$

$$\therefore 8x^3 = 49 + 15 \quad \therefore 8x^3 = 64$$

$$\therefore x^3 = \frac{64}{8} \quad \therefore x^3 = 8$$

$$\therefore x = 2 \quad \therefore \text{The solution set} = \{2\}$$

$$5 \quad S = \{2, 3, 4, 5, 6, 7, 8, 9, 10, 11\}$$

$$[a] \{4, 3, 2\} \quad [b] \{4, 9\}$$

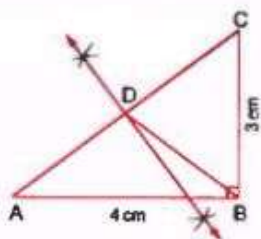
6

$$\begin{array}{r} x+3 \\ 4x-1 \overline{) 4x^2+11x+b} \\ \underline{\ominus 4x^2-x} \\ 12x+b \\ \underline{\ominus 12x-3} \\ b+3 \end{array}$$

$$\therefore b+3=0$$

$$\therefore b=-3$$

7



Yes, $BD = \frac{1}{2} AC$

17 Beni Suef

First Group :

1 d 2 b 3 b 4 c 5 a

6 b 7 a 8 d 9 a

Second Group :

$$\begin{aligned} 1 \quad \sqrt{\frac{81}{49}} + \left(\frac{3}{4}\right)^2 + \sqrt[3]{\frac{125}{343}} &= \frac{9}{7} + \frac{9}{16} + \frac{5}{7} \\ &= \frac{14}{7} + \frac{9}{16} = 2 + \frac{9}{16} \\ &= 2 \frac{9}{16} \end{aligned}$$

$$\begin{aligned} 2 \quad \because 2(x+5) &> 16 \\ \therefore x+5 &> \frac{16}{2} & \therefore x+5 > 8 \\ \therefore x &> 8-5 & \therefore x > 3 \\ \therefore \text{The solution set} &= \{x : x \in \mathbb{Q}, x > 3\} \end{aligned}$$

$$\begin{array}{r} 3 \quad \begin{array}{r} 2x+3 \\ x+5 \overline{) 2x^2+13x+15} \\ \underline{-(2x^2+10x)} \\ 3x+15 \\ \underline{-(3x+15)} \\ 0 \end{array} \end{array}$$

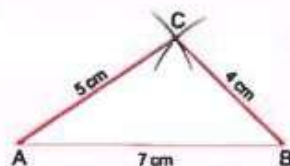
$\therefore$ The quotient $= 2x+3$

$$4 \quad \text{The area of the square} = \frac{1}{2} \times 10^2 = 50 \text{ cm}^2$$

$$\begin{aligned} \text{The area of the trapezium} &= \frac{1}{2} (6+8) \times 12 \\ &= 84 \text{ cm}^2 \end{aligned}$$

$\therefore$ The area of the trapezium is greater than the area of the square

5



ΔABC is obtuse-angled.

$$6 \quad S = \{1, 2, 3, 4, 5, 6\}$$

$$[a] C = \emptyset$$

$$[b] F = \{3, 6\}$$

7 Let the number of blue marbles be x

$$\therefore \frac{3}{4} = \frac{x}{28} \quad \therefore x = \frac{3 \times 28}{4} = 21$$

the number of blue marbles $= 21$

18 El-Menia

First Group :

1 b 2 a 3 c 4 c 5 c

6 a 7 d 8 b 9 b

Second Group :

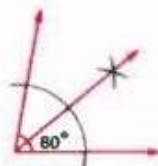
$$1 \quad \frac{3^8 \times 3^{-5}}{3^4 \times 3^{-3}} = \frac{3^{8-5}}{3^{4-3}} = \frac{3^3}{3} = 3^{3-1} = 3^2 = 9$$

$$2 \quad x + 3x(x+2) = x + 3x^2 + 6x = 3x^2 + 7x$$

When $x = -3$

$$\begin{aligned} \therefore \text{The numerical value} &= 3 \times (-3)^2 + 7 \times (-3) \\ &= 3 \times 9 - 21 = 27 - 21 = 6 \end{aligned}$$

3



4

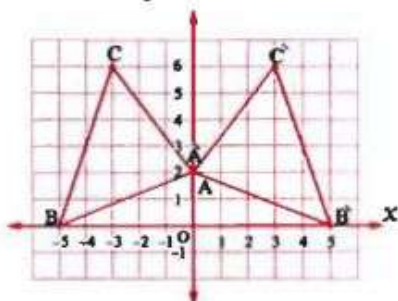
$$\begin{array}{r} \begin{array}{r} x^2-2x+5 \\ x+2 \overline{) x^3 + x+10} \\ \underline{-(x^3+2x^2)} \\ -2x^2+x+10 \\ \underline{+ (2x^2+4x)} \\ 5x+10 \\ \underline{-(5x+10)} \\ 0 \end{array} \end{array}$$

$\therefore$ The quotient $= x^2 - 2x + 5$

5 $A(0, 2) \xrightarrow[\text{in the y-axis}]{\text{by reflection}} \hat{A}(0, 2)$

$B(-5, 0) \xrightarrow[\text{in the y-axis}]{\text{by reflection}} \hat{B}(5, 0)$

$C(-3, 6) \xrightarrow[\text{in the y-axis}]{\text{by reflection}} \hat{C}(3, 6)$



6 [a] $\frac{5}{9}$

[b] $\frac{0}{9} = 0$

7 [a] $S = \{34, 36, 37, 43, 46, 47, 63, 64, 67, 73, 74, 76\}$

[b] $A = \{34, 36, 37, 73, 74, 76\}$

19

Souhag

First Group :

- 1 b 2 a 3 b 4 a 5 d
6 c 7 c 8 b 9 d

Second Group :

1 $\sqrt[3]{\frac{36}{25}} \times \left(\frac{2}{3}\right)^0 \times \sqrt[3]{\frac{125}{216}} = \frac{6}{5} \times 1 \times \frac{5}{6} = 1$

2 $\because 2(x-3) > 4 \quad \therefore x-3 > \frac{4}{2}$

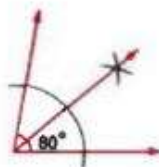
$\therefore x-3 > 2 \quad \therefore x > 2+3$

$\therefore x > 5$

$\therefore \text{The solution set} = \{6, 7, 8, \dots\}$

3 $\frac{24x^4 + 15x^3 + 12x^2}{3x^2} = 8x^2 + 5x + 4$

4



5 [a] $P(A) = \frac{3}{6} = \frac{1}{2}$ [b] $P(B) = \frac{5}{6}$

[c] $P(C) = \frac{2}{6} = \frac{1}{3}$

6 [a] $\frac{5}{15} = \frac{1}{3}$

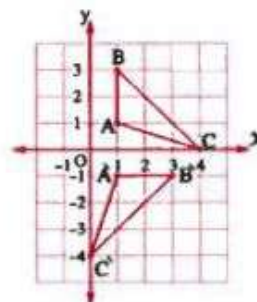
[b] $\frac{7}{15}$

[c] $\frac{12}{15} = \frac{4}{5}$

7 $A(1, 1) \xrightarrow{R(O, -90^\circ)} \hat{A}(1, -1)$

$B(1, 3) \xrightarrow{R(O, -90^\circ)} \hat{B}(3, -1)$

$C(4, 0) \xrightarrow{R(O, -90^\circ)} \hat{C}(0, -4)$



20

Aswan

First Group :

- 1 a 2 c 3 b 4 a 5 d
6 c 7 a 8 d 9 c

Second Group :

1 $\sqrt[3]{\frac{64}{125}} \times \sqrt{\frac{25}{16}} \times \left(\frac{-2}{9}\right)^0 = \frac{4}{5} \times \frac{5}{4} \times 1 = 1$

2 $4(x^2 - y^2) = 4(x - y)(x + y) = 4 \times 5 \times 7 = 140$

3

$$\begin{array}{r} 2x+3 \\ x+5 \overline{) 2x^2+13x+15} \\ \underline{-(2x^2+10x)} \\ 3x+15 \\ \underline{-(3x+15)} \\ 0 \end{array}$$

$\therefore \text{The quotient} = 2x + 3$

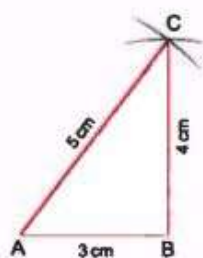
When $x = -2$:

$\therefore 2x + 3 = 2 \times (-2) + 3 = -4 + 3 = -1$

4 [a] $\frac{2}{9}$

[b] $\frac{3}{9} = \frac{1}{3}$

5



ΔABC is right-angled at B

6 Let the number of green balls be x

$$\therefore \frac{2}{5} = \frac{x}{30}$$

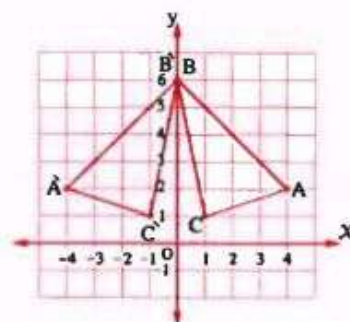
$$\therefore x = \frac{2 \times 30}{5} = 12 \text{ balls}$$

$$\therefore \text{The number of red balls} = 30 - 12 = 18 \text{ balls}$$

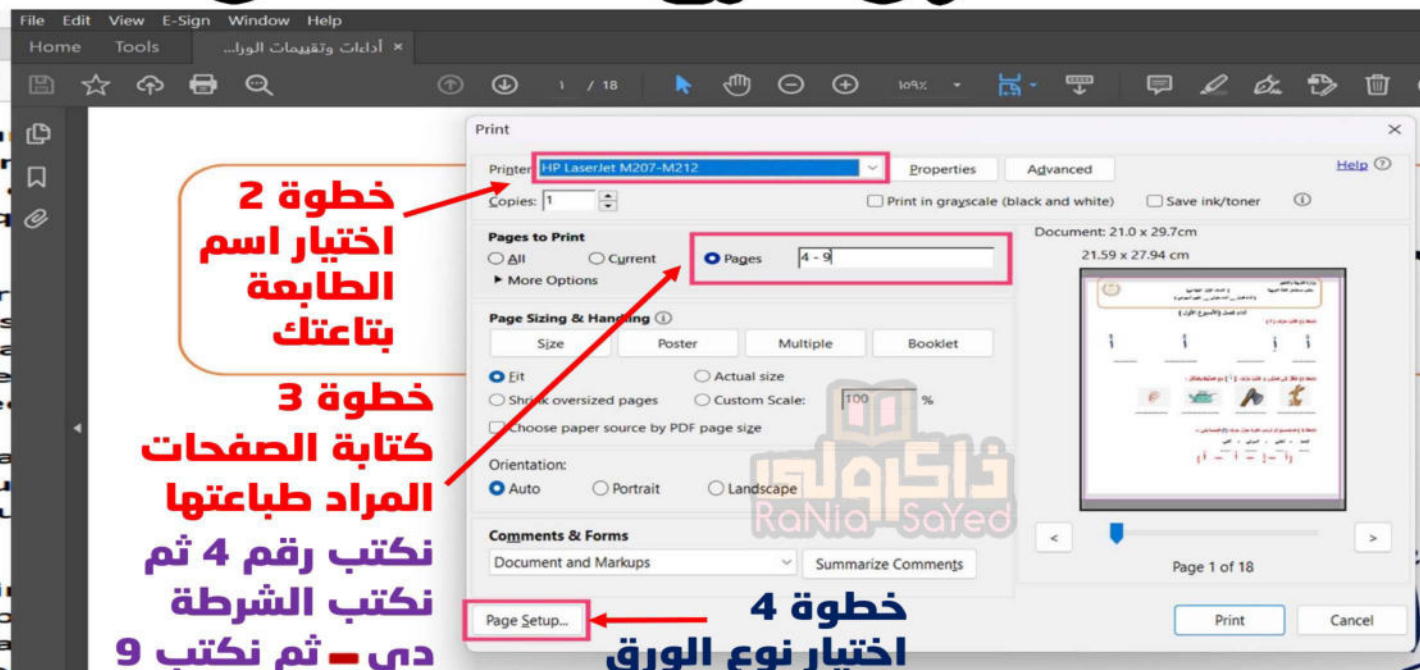
7 $A(4, 2) \xrightarrow{\text{by reflection in the y-axis}} \hat{A}(-4, 2)$

$B(0, 6) \xrightarrow{\text{by reflection in the y-axis}} \hat{B}(0, 6)$

$C(1, 1) \xrightarrow{\text{by reflection in the y-axis}} \hat{C}(-1, 1)$



كيفية طباعة صفحات معينة من ملف معين مثلا ازاي نطبع الصفحات من صفحة 4 الى صفحة 9



حمل الآن

مجانا وحصريا

امتحانات رقم (2)

الترم الثاني



A Choose the correct answer:

- 1 $2^3 \times 3^3 = \dots\dots\dots$ ($5^4, 6^4, 6^2, 6^3$)
- 2 $\sqrt[3]{64} = \dots\dots\dots$ ($2, 4, 8, 64$)
- 3 If $x = \frac{1}{2}, y = 3$, then $x^y = \dots\dots\dots$ ($\frac{1}{4}, \frac{1}{8}, \frac{-1}{8}, 8$)
- 4 $(-2x)(3x) = \dots\dots\dots$ ($6x^2, -6x^2, -6x, -5x$)
- 5 $-9x^3 \div (-3x) = \dots\dots\dots$ ($3x^2, -3x^2, -3x, 3x$)
- 6 The area of a square whose side length 4 cm $\dots\dots\dots$ The area of a square whose diagonal length 6 cm ($<, >, =$, otherwise)
- 7 The image of the point (2,-1) by the translation $(x, y) \rightarrow (x + 3, y)$ is $\dots\dots\dots$ [(0,5), (-1,4), (0,3), (5,-1)]
- 8 Drawing a colored ball from a box containing identical balls of unknown colors is $\dots\dots\dots$ (random experiment , not a random experiment , impossible event , certain event)
- 9 The rotation $R(O, 90^\circ)$ followed by rotation $R(O, 90^\circ)$ is equivalent to the rotation $\dots\dots\dots$ [$R(O, 180^\circ), R(O, 90^\circ), R(O, 270^\circ), R(O, -270^\circ)$]

B Answer each of the following:

- 1 Arrange the following numbers in a descending order:

$$16 \times 10^{-6}, 1.5 \times 10^{-5}, 0.8 \times 10^{-5}, 14 \times 10^{-4}$$

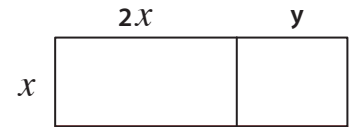
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- 2 Find in the simplest form the algebraic expression that represents the area of the opposite shape.



- 3 A trapezium has an area of 45 square inches and a height of 5 inches. Find the length of its middle base.

- 4 Draw A of length 6 cm and bisect it using a ruler and compass.

- 5 If a card is drawn randomly from identical cards numbered from 20 to 29. Find the probability that the card carries.

- a) An even number.
b) A number less than 22.

- 6 Find the quotient of $(x^2 - 2x - 15)$ divided by $(x - 5)$

- 7 Find in $\mathbb{Z}$ the solution set for the inequality:

$$3x + 7 < 7x + 3$$

A Choose the correct answer:

- 1 If $\sqrt{x} = 4$, then $x = \dots\dots\dots$ (8 , 16 , ± 16 , 20)
- 2 If $x - 2 > 5$, then the value of x could be $\dots\dots\dots$ (5 , 6 , 7 , 8)
- 3 If $x^2 + y^2 = 20$, and $(x + y)^2 = 26$, then $xy = \dots\dots\dots$ (3 , 6 , 9 , 12)
- 4 The image of the point (5,-2) by a translation of 5 units in the positive direction of the X-axis is $\dots\dots\dots$ [(5,-7) , (5,-3) , (0,-2) , (10, -2)]
- 5 $\dots\dots\dots \div (-2x^2y) = 12xy^2$ ($6xy$, $-6xy$, $24x^3y^3$, $-24x^3y^3$)
- 6 The area of a rhombus is 32 square units, then the product of the lengths of its diagonals = $\dots\dots\dots$ (16 , 64 , 128 , 8)
- 7 The identity rotation is a rotation around the origin by an angle of measure $\dots\dots\dots$ (90° , 180° , 270° , 360°)
- 8 In an experiment of rolling a fair die once, the probability of appearing a number less than 5 is $\dots\dots\dots$ ($\frac{1}{3}$, $\frac{1}{2}$, $\frac{2}{3}$, $\frac{1}{6}$)
- 9 The image of the point (-1, 2) by reflection in the Y-axis followed by reflection in the Y-axis again is $\dots\dots\dots$ [(-1,-2) , (1,-2) , (-1,2) , (1,2)]

B Answer each of the following:

- 1 A cube has a volume of 729 cubic units, what is the length of its edge?

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- 2 Solve the following equation in $\mathbb{Z}$:

$$2x(x - 5) + 10x = 50$$

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- 3 A trapezium has an area of 315 square centimeters, a height of 15 cm, and the ratio between the lengths of its parallel bases is 3 : 4. What is the length of each base?

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- 4 Draw the triangle ABC where: $AB = 4$ cm , $BC = 5$ cm and $AC = 2$ cm , and determine the type of the triangle according to the measures of its angles.

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- 5 Divide $x^2 - 5x + 6$ by $x - 3$

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- 6 Find in the simplest form: $2x(3x - 1) + 3x(x + 2)$, then find the numerical value of the resulting expression when $x = 1$

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- 7 Simplify the following:

$$\sqrt[3]{\frac{125}{27}} \times \sqrt{\frac{81}{25}} \times \left(\frac{9}{5}\right)^0$$

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A Choose the correct answer:

- 1 $0.7 \times 0.004 = \dots\dots\dots$ (2.8×10^3 , 2.8×10^{-2} , 2.8×10^2 , 2.8×10^{-3})
- 2 In an experiment of rolling a fair die once, the probability of getting a number more than 3 is $\dots\dots\dots$ (0 , $33\frac{1}{3}\%$, 50% , 75%)
- 3 A trapezium with area 80 cm^2 and one of its parallel bases of length 4 cm and height 10 cm , then the length of the other base = $\dots\dots\dots$ cm. (6 , 12 , 16 , 20)
- 4 $|\sqrt[3]{-64}| = \dots\dots\dots$ (2 , 4 , 8 , -4)
- 5 If $(x - 3)(x + 3) = x^2 - m$, then $m = \dots\dots\dots$ (9 , -9 , 6 , -6)
- 6 If the area of a square is 200 cm^2 , then the length of its diagonal = $\dots\dots\dots$ cm. (10 , 20 , 15 , 25)
- 7 In the experiment of choosing a digit of the number 9,742 randomly, what is the sample space? ($\{2,4,9\}$, $\{2,4,9,7\}$, $\{97,74,42\}$, $\{9742\}$)
- 8 The image of point A($\dots\dots\dots$, $\dots\dots\dots$) is A'(7, -2) by reflection in Y-axis followed by reflection in X-axis. [$(7,0)$, $(-7,-2)$, $(7,2)$, $(-7,2)$]
- 9 The image of the point $(-2,4)$ under rotation $R(O,90^\circ)$ followed by rotation $R(O,180^\circ)$ is $\dots\dots\dots$ [$(-4,2)$, $(4,2)$, $(-4,-2)$, $(4,-2)$]

B Answer each of the following:

- 1 Find the solution set for the following equation in $\mathbb{Z}$:

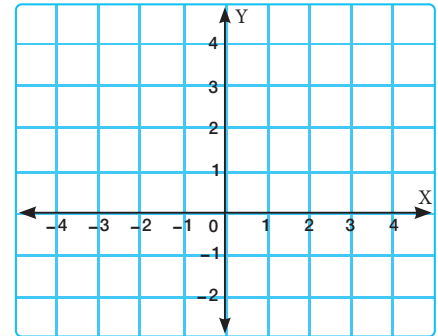
$$4(x^2 - 1) = 3(x^2 + 4)$$

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- 2 Draw $\triangle ABC$ where: A (3,4), B (4,1) and C (0,1), then draw its image by the translation $(x, y) \rightarrow (x-4, y-2)$.



- 3 A fair coin was tossed twice consecutively, and the sequence of heads and tails was observed. Find the probability of each of the following events:

- a) The event of getting two heads.
b) The event of getting at least one head.

- 4 Draw $\angle ABC$ of measure 70° , then bisect it using a ruler and compass.

- 5 Find the value of x in the equation:

$$8x^3 + 15 = -49$$

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- 6 Find the quotient of:

$$\frac{18x^3 + 12x^2 - 6x}{-6x}$$

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- 7 Find the diagonal length of the square whose area is equal to the area of a rhombus with diagonal lengths of 4 meters and 25 meters .

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A Choose the correct answer:

- 1 The rotation $R(O, 180^\circ)$ followed by rotation $R(O, 180^\circ)$ is equivalent to the rotation
[$R(O, 180^\circ)$, $R(O, 90^\circ)$, $R(O, 360^\circ)$, $R(O, 270^\circ)$]
- 2 $(-3)^2 = \dots\dots\dots$ (9 , -9 , 6 , -6)
- 3 In the experiment of forming a two-digit number consists of different digits from the set of digits {1,3,4}, how many elements are in the event that expresses the resulting number is odd? (2 , 3 , 4 , 6)
- 4 If $x = \sqrt{\frac{1}{9}}$, then $x^3 = \dots\dots\dots$ ($\frac{1}{3}$, $\frac{1}{9}$, $\frac{1}{27}$, $\frac{1}{81}$)
- 5 $84 \times 10^{-8} = m \times 10^{-7}$, then $m = \dots\dots\dots$ (84 , 8.4 , 0.84 , 840)
- 6 If the edge length of a cube is $3a$, then the volume of the cube =
($9a^2$, $27a^3$, $3a^3$, $9a^3$)
- 7 $(x^3 + x^2) \div x^2 = \dots\dots\dots$ (0 , x , $x + 1$, $2x + 1$)
- 8 A trapezium with an area 100 cm^2 , and a middle base length 8 cm, then
its height = cm. (8 , 10 , 12 , 12.5)
- 9 The image of the point (0,8) by the translation $(x, y) \rightarrow (x - 3, y - 4)$ is
[(-1,5) , (-3, 4) , (5,3) , (-1,3)]

B Answer each of the following:

- 1 Write the sample space of the random experiment of drawing a card from a set of identical cards numbered from 20 to 25 and observing the number written on the drawn card.

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- 2 Draw the triangle ABC where $AB = 4.5 \text{ cm}$, $AC = 3 \text{ cm}$ and $m(\angle A) = 72^\circ$

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- 3 A cuboid has a volume of $(12x^2y + 20xy^2)$ cubic units and a base area of $(4xy)$ square units. Find its height in terms of x and y .

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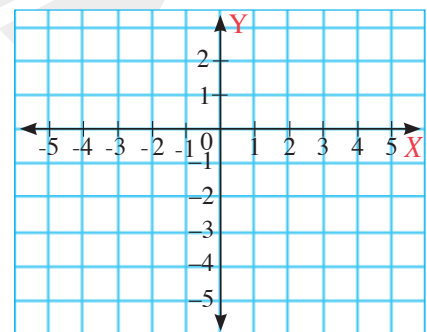
- 4 Draw $\triangle ABC$ where: $A(0, 2)$, $B(-5, 0)$ and $C(-3, -5)$, then draw the image of $\triangle ABC$ by a reflection in the y -axis.

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- 5 What is the solution set of the inequality $3x - 2 \leq 10$ in $\mathbb{N}$?

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6 Which has a greater area ?

A rhombus with diagonal lengths 12 cm and 10 cm or a rectangle with a length of 8 cm and width of 7 cm.

7 Simplify the following

$$\left(\frac{3}{2}\right)^2 + \sqrt{\frac{25}{4}} + \sqrt[3]{\frac{125}{64}}$$

A Choose the correct answer:

- 1 The area of a rhombus with diagonal lengths 8 cm and 6 cm The area of a square with diagonal length 7 cm. ($>$, $<$, $=$, otherwise)
- 2 If $\frac{x-2}{2-x} = a$, then $a =$ (-2 , -1 , 1 , 2)
- 3 $x(x+1) - x =$ ($2x^2$, x^2 , $x^2 - x$, $x^2 + x$)
- 4 The quarter of 2^{20} is (2^5 , 2^{10} , 2^{19} , 1^{18})
- 5 If $x^3 = -1000$, then $x =$ (-10 , 10 , ± 10 , 100)
- 6 $\sqrt[3]{25 - \dots} = 2$ (16 , 9 , 17 , 15)
- 7 If $(x-2)(x+3) = x^2 + ax + b$, then $a + b =$ (5 , -5 , 4 , -4)
- 8 The image of the point (4, 5) by reflection in the y-axis followed by reflection in the X-axis is [(4,5) , (-4, -5) , (-4, 5) , (4, -5)]
- 9 In an experiment of rolling a fair die and observing the upper face, the probability of rolling a number that is not equal to 2 is ($\frac{1}{6}$, $\frac{2}{3}$, $\frac{5}{6}$, $\frac{1}{3}$)

B Answer each of the following:

- 1 In the experiment of tossing a fair coin two consecutive times and observing the sequence of heads and tails that appears.

Write the sample space indicating the number of its elements.

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- 2 Find the result of: $\frac{(-5)^4 \times 5^2 \times (-5)^3}{(-5)^6 \times (-5)^5}$

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- 3 Find the solution set in $\mathbb{Q}$ for the inequality:

$$2 - 4(x + 2) \geq x + 9$$

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- 4 Draw the triangle ABC where: $AB = 7$ cm, $m(\angle A) = 65^\circ$ and $m(\angle B) = 50^\circ$, then determine the type of the triangle according to the lengths of its sides.

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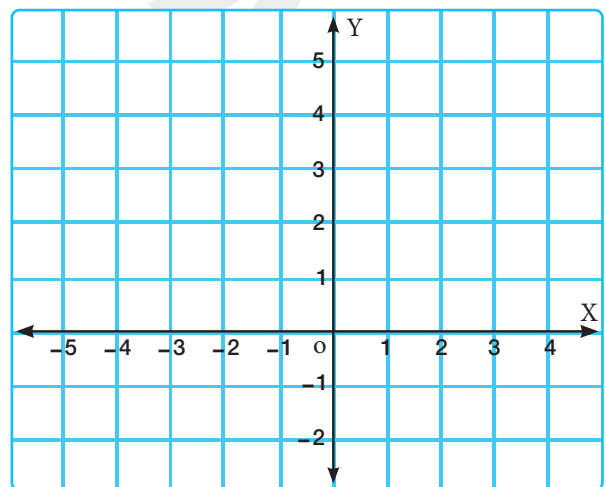
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- 5 Draw $\triangle ABC$ where: A $(-2, 5)$, B $(1, 2)$ and C $(4, 4)$, then draw its image under rotation $R(O, 90^\circ)$

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- 6 A bag contains 40 identical marbles. Hani draw randomly a marble and found that it is red. If the probability of drawing a red marble is $\frac{3}{5}$, then find the number of red marbles in the bag .

- 7 Find the product of:

a) $(m + 4n)(2m - n)$

b) $(\frac{1}{2}x + 1)(\frac{1}{2}x - 1)$

A Choose the correct answer:

- 1 $2^3 \times 3^3 = \dots\dots\dots$ ($5^4, 6^4, 6^2, 6^3$)
- 2 $\sqrt[3]{64} = \dots\dots\dots$ ($2, 4, 8, 64$)
- 3 If $x = \frac{1}{2}, y = 3$, then $x^y = \dots\dots\dots$ ($\frac{1}{4}, \frac{1}{8}, \frac{-1}{8}, 8$)
- 4 $(-2x)(3x) = \dots\dots\dots$ ($6x^2, -6x^2, -6x, -5x$)
- 5 $-9x^3 \div (-3x) = \dots\dots\dots$ ($3x^2, -3x^2, -3x, 3x$)
- 6 The area of a square whose side length 4 cm $\dots\dots\dots$ The area of a square whose diagonal length 6 cm. ($<, >, =$, otherwise)
- 7 The image of the point (2,-1) by the translation $(x, y) \rightarrow (x + 3, y)$ is $\dots\dots\dots$
[(0,5), (-1,4), (0,3), (5,-1)]
- 8 Drawing a colored ball from a box containing identical balls of unknown colors is $\dots\dots\dots$ (random experiment, not a random experiment, impossible event, certain event)
- 9 The rotation $R(O, 90^\circ)$ followed by rotation $R(O, 90^\circ)$ is equivalent to the rotation $\dots\dots\dots$
[$R(O, 180^\circ)$, $R(O, 90^\circ)$, $R(O, 270^\circ)$, $R(O, -270^\circ)$]

B Answer each of the following:

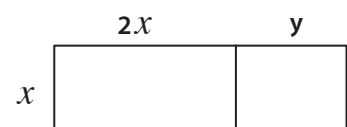
- 1 Arrange the following numbers in a descending order:

$$16 \times 10^{-6}, 1.5 \times 10^{-5}, 0.8 \times 10^{-5}, 14 \times 10^{-4}$$

The order: 14×10^{-4} , 16×10^{-6} , 1.5×10^{-5} , 0.8×10^{-5}

- 2 Find in the simplest form the algebraic expression that represents the area of the opposite shape.

The area = $x(2x + y) = 2x^2 + xy$

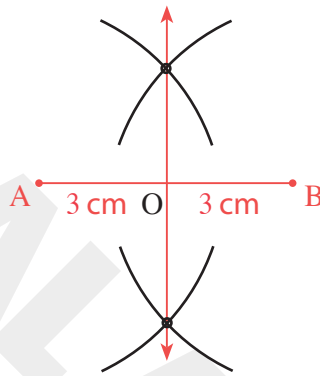


- 3 A trapezium has an area of 45 square inches and a height of 5 inches.

Find the length of its middle base.

$$\text{The length of middle base} = \frac{\text{the area}}{\text{height}} = \frac{45}{5} = 9 \text{ inches}$$

- 4 Draw $\overline{AB}$ of length 6 cm and bisect it using a ruler and compass.



- 5 If a card is drawn randomly from identical cards numbered from 20 to 29. Find the probability that the card carries.

- a) An even number
b) A number less than 22

a) $\frac{1}{2}$

b) $\frac{1}{5}$

- 6 Find the quotient of $(x^2 - 2x - 15)$ divided by $(x - 5)$

$$\begin{array}{r} x+3 \\ x-5 \overline{) x^2 - 2x - 15} \\ \underline{-(x^2 - 5x)} \\ 3x - 15 \\ \underline{-(3x - 15)} \\ 0 \end{array}$$

The quotient is $x + 3$

- 7 Find in $\mathbb{Z}$ the solution set for the inequality :

$$3x + 7 < 7x + 3$$

$$3x + 7 < 7x + 3$$

$$3x - 7x < 3 - 7$$

$$-4x < -4$$

$$x > 1$$

$$S.S = \{ 2, 3, 4, \dots \}$$

A Choose the correct answer:

- 1 If $\sqrt{x} = 4$, then $x = \dots\dots\dots$ (8, **16**, ± 16 , 20)
- 2 If $x - 2 > 5$, then the value of x could be $\dots\dots\dots$ (5, 6, 7, **8**)
- 3 If $x^2 + y^2 = 20$, and $(x + y)^2 = 26$, then $xy = \dots\dots\dots$ (**3**, 6, 9, 12)
- 4 The image of the point (5,-2) by a translation of 5 units in the positive direction of the X -axis is $\dots\dots\dots$ [(5,-7), (5,-3), (0,-2), **(10,-2)**]
- 5 $\dots\dots\dots \div (-2x^2y) = 12xy^2$ ($6xy$, $-6xy$, $24x^3y^3$, **$-24x^3y^3$**)
- 6 The area of a rhombus is 32 square units, then the product of the lengths of its diagonals = $\dots\dots\dots$ (16, **64**, 128, 8)
- 7 The identity rotation is a rotation around the origin by an angle of measure $\dots\dots\dots$ (90° , 180° , 270° , **360°**)
- 8 In an experiment of rolling a fair die once, the probability of appearing a number less than 5 is $\dots\dots\dots$ ($\frac{1}{3}$, $\frac{1}{2}$, **$\frac{2}{3}$** , $\frac{1}{6}$)
- 9 The image of the point (-1, 2) by reflection in the Y -axis followed by reflection in the Y -axis again is $\dots\dots\dots$ [(-1,-2), (1,-2), **(-1,2)**, (1,2)]

B Answer each of the following:

- 1 A cube has a volume of 729 cubic units, what is the length of its edge?

The length of edge = $\sqrt[3]{729} = 9$ units

- 2 Solve the following equation in $\mathbb{Z}$:

$$2x(x - 5) + 10x = 50$$

$$2x^2 - 10x + 10x = 50$$

$$2x^2 = 50$$

$$x^2 = 25$$

$$x = \pm 5$$

- 3 A trapezium has an area of 315 square centimeters, a height of 15 cm, and the ratio between the lengths of its parallel bases is 3 : 4. What is the length of each base ?

$$\text{The length of the middle base} = \frac{\text{The area}}{\text{height}} = \frac{315}{15} = 21 \text{ cm}$$

First base : Second base : Sum

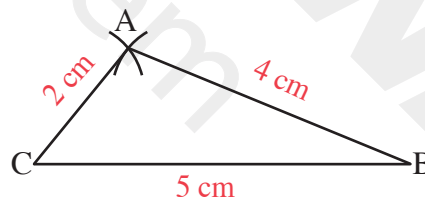
$$\begin{array}{rclcl} 3 & : & 4 & : & 7 \\ & & & & \\ & : & & : & 42 \end{array}$$

$$\text{The value of one part} = 42 \div 7 = 6$$

$$\text{The length of first base} = 3 \times 6 = 18 \text{ cm}$$

$$\text{The length of second base} = 4 \times 6 = 24 \text{ cm}$$

- 4 Draw the triangle ABC where: AB = 4 cm, BC = 5 cm and AC = 2 cm, and determine the type of the triangle according to the measures of its angles.



Obtuse-angled triangle

- 5 Divide $x^2 - 5x + 6$ by $x - 3$

$$\begin{array}{r} x-2 \\ x-3 \overline{) x^2 - 5x + 6} \\ \underline{-(x^2 - 3x)} \\ -2x + 6 \\ \underline{+2x - 6} \\ 0 \\ 0 \end{array}$$

The quotient is $x - 2$

- 6 Find in the simplest form: $2x(3x - 1) + 3x(x + 2)$, then find the numerical value of the resulting expression when $x = 1$

$$\begin{aligned} & 2x(3x - 1) + 3x(x + 2) \\ &= 6x^2 - 2x + 3x^2 + 6x \\ &= 9x^2 + 4x \end{aligned}$$

The value when $x = 1$ is $9(1)^2 + 4 \times 1 = 9 + 4 = 13$

- 7 Simplify the following:

$$\begin{aligned} & \sqrt[3]{\frac{125}{27}} \times \sqrt{\frac{81}{25}} \times \left(\frac{9}{5}\right)^0 \\ & \frac{5}{3} \times \frac{9}{5} \times 1 = 3 \end{aligned}$$

A Choose the correct answer:

- 1 $0.7 \times 0.004 = \dots\dots\dots$ (2.8×10^3 , 2.8×10^{-2} , 2.8×10^2 , **2.8×10^{-3}**)
- 2 In an experiment of rolling a fair die once, the probability of getting a number more than 3 is $\dots\dots\dots$ (0 , $33\frac{1}{3}\%$, **50%** , 75%)
- 3 A trapezium with area 80 cm^2 and one of its parallel bases of length 4 cm and height 10 cm , then the length of the other base = $\dots\dots\dots$ cm. (6 , **12** , 16 , 20)
- 4 $|\sqrt[3]{-64}| = \dots\dots\dots$ (2 , **4** , 8 , -4)
- 5 If $(x - 3)(x + 3) = x^2 - m$, then $m = \dots\dots\dots$ (**9** , -9 , 6 , -6)
- 6 If the area of square is 200 cm^2 , then the length of its diagonal = $\dots\dots\dots$ cm. (10 , **20** , 15 , 25)
- 7 In the experiment of choosing a digit of the number 9,742 randomly, what is the sample space? ($\{2,4,9\}$, **$\{2, 4, 9, 7\}$** , $\{97,74,42\}$, $\{9742\}$)
- 8 The image of point A($\dots\dots\dots$, $\dots\dots\dots$) is A'(7, -2) by reflection in Y-axis followed by reflection in X-axis . [$(7,0)$, $(-7,-2)$, $(7,2)$, **$(-7, 2)$**]
- 9 The image of the point $(-2,4)$ under rotation $R(O,90^\circ)$ followed by rotation $R(O,180^\circ)$ is $\dots\dots\dots$ [$(-4, 2)$, **$(4, 2)$** , $(-4, -2)$, $(4, -2)$]

B Answer each of the following:

- 1 Find the solution set for the following equation in $\mathbb{Z}$:

$$4(x^2 - 1) = 3(x^2 + 4)$$

$$4x^2 - 4 = 3x^2 + 12$$

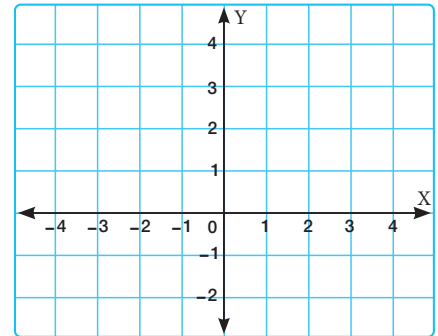
$$4x^2 - 3x^2 = 4 + 12$$

$$x^2 = 16$$

$$x = \pm 4$$

$$\text{S.S.} = \{4, -4\}$$

- 2 Draw $\triangle ABC$ where: A (3, 4), B (4, 1) and C (0, 1), then draw its image by the translation $(x, y) \rightarrow (x - 4, y - 2)$.

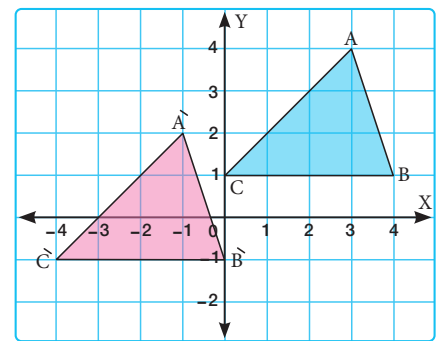


by the translation $(x, y) \rightarrow (x - 4, y - 2)$,

$$A(3, 4) \rightarrow A'(-1, 2)$$

$$B(4, 1) \rightarrow B'(0, -1)$$

$$C(0, 1) \rightarrow C'(-4, -1)$$



Then $\triangle A'B'C'$ is the image of $\triangle ABC$ by translation $(x, y) \rightarrow (x - 4, y - 2)$.

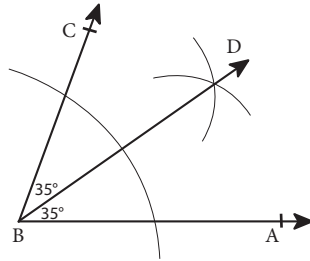
- 3 A fair coin was tossed twice consecutively, and the sequence of heads and tails was observed. Find the probability of each of the following events:
- a) The event of getting two heads.
 - b) The event of getting at least one head.

Sample space = {HH, HT, TH, TT}

a) $\frac{1}{4}$

b) $\frac{3}{4}$

- 4 Draw $\angle ABC$ of measure 70° , then bisect it using a ruler and compass.



- 5 Find the value of x in the equation:

$$8x^3 + 15 = -49$$

$$8x^3 = -49 - 15$$

$$8x^3 = -64$$

$$x^3 = -8$$

$$x = -2$$

- 6 Find the quotient of:

$$\frac{18x^3 + 12x^2 - 6x}{-6x}$$

$$\frac{18x^3 + 12x^2 - 6x}{-6x} = \frac{18x^3}{-6x} + \frac{12x^2}{-6x} - \frac{6x}{-6x} = -3x^2 - 2x + 1$$

- 7 Find the diagonal length of the square whose area is equal to the area of a rhombus with diagonal lengths of 4 meters and 25 meters.

$$\begin{aligned} \text{The area of the rhombus} &= \frac{1}{2} \times d_1 \times d_2 \\ &= \frac{1}{2} \times 25 \times 4 = 50 \text{ m}^2 \end{aligned}$$

$$\begin{aligned} \text{The area of the square} &= \frac{1}{2} \times d^2 \\ 50 &= \frac{1}{2} \times d^2 \\ d^2 &= 100 \\ d &= 10 \text{ m} \end{aligned}$$

Diagonal length of the square = 10 m

A Choose the correct answer:

- 1 The rotation $R(O, 180^\circ)$ followed by rotation $R(O, 180^\circ)$ is equivalent to the rotation
[$R(O, 180^\circ)$, $R(O, 90^\circ)$, **$R(O, 360^\circ)$** , $R(O, 270^\circ)$]
- 2 $(-3)^2 = \dots\dots\dots$ (**9**, -9, 6, -6)
- 3 In the experiment of forming a two-digit number consists of different digits from the set of digits {1, 3, 4}, how many elements are in the event that expresses the resulting number is odd? (2, 3, **4**, 6)
- 4 If $x = \sqrt{\frac{1}{9}}$, then $x^3 = \dots\dots\dots$ ($\frac{1}{3}$, $\frac{1}{9}$, **$\frac{1}{27}$** , $\frac{1}{81}$)
- 5 $84 \times 10^{-8} = m \times 10^{-7}$, then $m = \dots\dots\dots$ (84, **8.4**, 0.84, 840)
- 6 If the edge length of a cube is $3a$, then the volume of the cube =
($9a^2$, **$27a^3$** , $3a^3$, $9a^3$)
- 7 $(x^3 + x^2) \div x^2 = \dots\dots\dots$ (0, x , **$x + 1$** , $2x + 1$)
- 8 A trapezium with an area 100 cm^2 , and a middle base length 8 cm, then its height = cm. (8, 10, 12, **12.5**)
- 9 The image of the point (0, 8) by the translation $(x, y) \rightarrow (x - 3, y - 4)$ is
[(-1, 5), **(-3, 4)**, (5, 3), (-1, 3)]

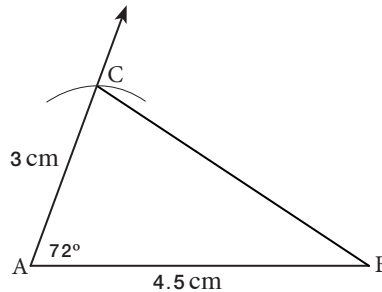
B Answer each of the following:

- 1 Write the sample space of the random experiment of drawing a card from a set of identical cards numbered from 20 to 25 and observing the number written on the drawn card.

$$S = \{20, 21, 22, 23, 24, 25\}$$

$$n(S) = 6$$

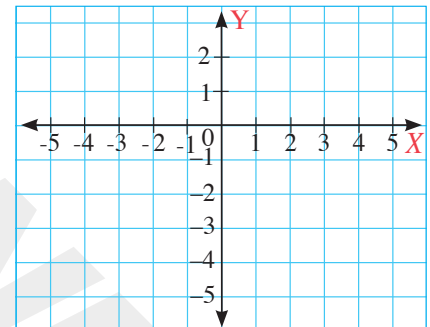
- 2 Draw the triangle ABC where $AB = 4.5$ cm, $AC = 3$ cm and $m(\angle A) = 72^\circ$



- 3 A cuboid has a volume of $(12x^2y + 20xy^2)$ cubic units and a base area of $(4xy)$ square units. Find its height in terms of x and y .

$$\text{The height} = \frac{\text{The volume}}{\text{base area}} = \frac{12x^2y + 20xy^2}{4xy} = (3x + 5y) \text{ units}$$

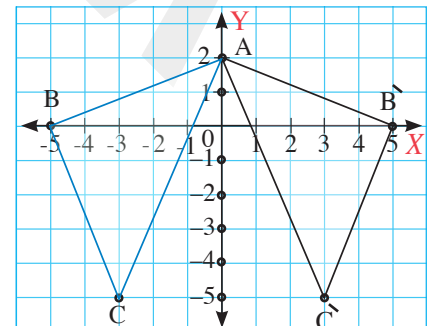
- 4 Draw $\triangle ABC$ where: $A(0, 2)$, $B(-5, 0)$ and $C(-3, -5)$, then draw the image of $\triangle ABC$ by a reflection in the y -axis.



$$A(0, 2) \rightarrow A(0, 2) \text{ (the same)}$$

$$B(-5, 0) \rightarrow B'(5, 0)$$

$$C(-3, -5) \rightarrow C'(3, -5)$$



Then $\triangle A'B'C'$ is the image of $\triangle ABC$ by reflection in the Y -axis

- 5 What is the solution set of the inequality $3x - 2 \leq 10$ in $\mathbb{N}$?

$$3x - 2 \leq 10$$

$$3x \leq 12$$

$$x \leq 4$$

$$S.S = \{0, 1, 2, 3, 4\}$$

- 6 Which has a greater area?

A rhombus with diagonal lengths 12 cm and 10 cm or a rectangle with a length of 8 cm and width of 7 cm.

$$\begin{aligned}\text{The area of the rhombus} &= \frac{1}{2} \times d_1 \times d_2 \\ &= \frac{1}{2} \times 12 \times 10 = 60 \text{ cm}^2\end{aligned}$$

$$\begin{aligned}\text{The area of the rectangle} &= \text{length} \times \text{width} \\ &= 8 \times 7 = 56 \text{ cm}^2\end{aligned}$$

The area of the rhombus is greater.

- 7 Simplify the following:

$$\left(\frac{3}{2}\right)^2 + \sqrt{\frac{25}{4}} + \sqrt[3]{\frac{125}{64}}$$

$$\begin{aligned}\frac{9}{4} + \frac{5}{2} + \frac{5}{4} &= \frac{9}{4} + \frac{5}{4} + \frac{5}{4} \\ &= \frac{14}{4} + \frac{5}{4} \\ &= \frac{14}{4} + \frac{10}{4} \\ &= \frac{24}{4} \\ &= 6\end{aligned}$$

A Choose the correct answer:

- 1 The area of a rhombus with diagonal lengths 8 cm and 6 cm The area of a square with diagonal length 7 cm. ($>$, $<$, $=$, otherwise)
- 2 If $\frac{x-2}{2-x} = a$, then $a =$ (-2 , -1 , 1 , 2)
- 3 $x(x+1) - x =$ ($2x^2$, x^2 , $x^2 - x$, $x^2 + x$)
- 4 The quarter of 2^{20} is (2^5 , 2^{10} , 2^{19} , 2^{18})
- 5 If $x^3 = -1000$, then $x =$ (-10 , 10 , ± 10 , 100)
- 6 $\sqrt[3]{25 - \dots} = 2$ (16 , 9 , 17 , 15)
- 7 If $(x-2)(x+3) = x^2 + ax + b$, then $a + b =$ (5 , -5 , 4 , -4)
- 8 The image of the point (4, 5) by reflection in the y-axis followed by reflection in the X- axis is [(4,5) , (-4, -5) , (-4,5) , (4,-5)]
- 9 In an experiment of rolling a fair die and observing the upper face, the probability of rolling a number that is not equal to 2 is ($\frac{1}{6}$, $\frac{2}{3}$, $\frac{5}{6}$, $\frac{1}{3}$)

B Answer each of the following:

- 1 In the experiment of tossing a fair coin two consecutive times and observing the sequence of heads and tails that appears.

Write the sample space indicating the number of its elements.

$$S = \{(H, H) , (H, T) , (T, H) , (T, T)\}$$

$$n(S) = 4$$

- 2 Find the result of: $\frac{(-5)^4 \times 5^2 \times (-5)^3}{(-5)^6 \times (-5)^5}$

$$= \frac{5^4 \times 5^2 \times (-5)^3}{5^6 \times (-5)^5} = \frac{-5^9}{-5^{11}} = \frac{1}{5^2} = \frac{1}{25}$$

- 3 Find the solution set in $\mathbb{Q}$ for the inequality:

$$2 - 4(x + 2) \geq x + 9$$

$$2 - 4(x + 2) \geq x + 9$$

$$2 - 4x - 8 \geq x + 9$$

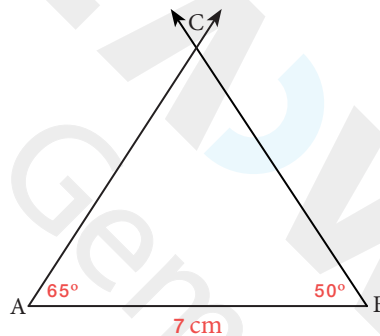
$$-4x - 6 \geq x + 9$$

$$-5x \geq 15$$

$$x \leq -3$$

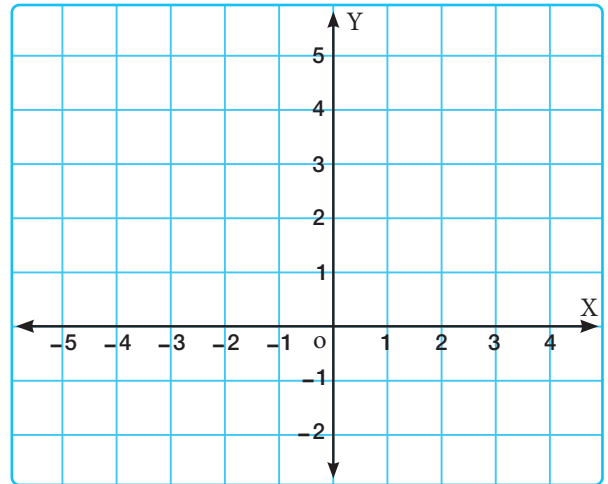
Solution set is $\{x: x \in \mathbb{Q}, x \leq -3\}$

- 4 Draw the triangle ABC where: $AB = 7$ cm, $m(\angle A) = 65^\circ$ and $m(\angle B) = 50^\circ$, then determine the type of the triangle according to the lengths of its sides.



$\triangle ABC$ is an isosceles triangle.

- 5 Draw $\triangle ABC$ where: A $(-2, 5)$, B $(1, 2)$ and C $(4, 4)$, then draw its image under rotation $R(O, 90^\circ)$

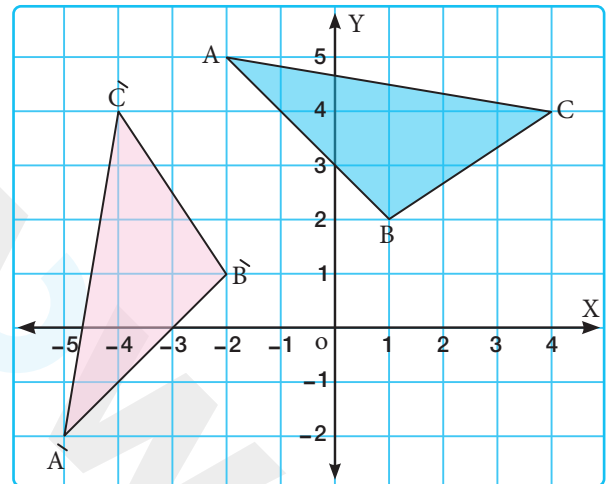


$$A(-2, 5) \rightarrow A'(-5, -2)$$

$$B(1, 2) \rightarrow B'(-2, 1)$$

$$C(4, 4) \rightarrow C'(-4, 4)$$

Then $\triangle A'B'C'$ is the image of $\triangle ABC$ under rotation $R(O, 90^\circ)$



- 6 A bag contains 40 identical marbles. Hani draw randomly a marble and found that it is red. If the probability of drawing a red marble is $\frac{3}{5}$, then find the number of red marbles in the bag.

$$\text{The number of red marbles in the bag} = \frac{3}{5} \times 40 = 24 \text{ marbles}$$

- 7 Find the product of:

a) $(m + 4n)(2m - n)$

b) $(\frac{1}{2}x + 1)(\frac{1}{2}x - 1)$

a) $2m^2 + 7mn - 4n^2$

b) $\frac{1}{4}x^2 - 1$

حمل الآن

مجانا وحصريا

امتحانات رقم (3)

الترم الثاني



First: Choose the correct answer:

- 1 What is the value of $\sqrt[3]{64}$?
 a 2 b 4 c 8 d 64
- 2 $0.3 \times 0.005 =$
 a 1.5×10^3 b 1.5×10^{-2} c 1.5×10^2 d 1.5×10^{-3}
- 3 The S.S of the inequality $2x < 0$ in Z is
 a $\emptyset$ b N c Z^- d Z^+
- 4 If point $D' (2, 5)$ is the image of D by the translation $(x, y) \rightarrow (x - 3, y + 2)$, then point D is
 a $(5, 3)$ b $(-1, 7)$ c $(2, 3)$ d $(5, 7)$
- 5 If point $B' (y + 2, 1)$ is the image of point $B (-1, 3)$ by rotation around the origin O by an angle of 90° clockwise, what is the value of y ?
 a -2 b 3 c -5 d 1
- 6 If the diagonals of a rhombus are 12cm and 20cm, then its area = cm^2 .
 a 25 b 90 c 50 d 120
- 7 If $\frac{3a^3}{c} = 1$, what is the value of c ?
 a -1 b 1 c $3a^3$ d $-3a^3$
- 8 $(4x^2 - 9) \div (2x + 3) =$
 a $(2x + 3)$ b $(2x - 3)$ c $(2x + 4)$ d $(2x - 4)$
- 9 In a set of colored cards (Red, Green, and Blue), if you choose one card randomly, the probability that the card is Blue is
 a $\frac{1}{4}$ b $\frac{1}{3}$ c $\frac{1}{2}$ d $\frac{1}{5}$

Second: Answer the following:

- 1 Find the value of: $\frac{2^5 \times 7^4 \times 10^7}{2^4 \times 10^6 \times 7^3} = \dots\dots\dots$
- 2 Find the quotient of: $(3x^2 + 10x + 7) \div (x + 1)$
- 3 Draw $\triangle ABC$, where $m(\angle ABC) = 35^\circ$, $m(\angle ACB) = 55^\circ$, and the length of $\overline{BC}$ equals 6cm. Then, determine by measuring the type of the triangle according the lengths of its sides.
- 4 Find the solution set for the following equation in Q :
 $(x - 3)(x + 3) = 7$
 $\dots\dots\dots$
- 5 Find in the simplest form: $3ab \times (6a + 2b - 7)$.
 $\dots\dots\dots$
- 6 Find the area of a rhombus with diagonals 7cm and 14cm long.
 $\dots\dots\dots$
- 7 Khaled has a spinning game divided into 8 equal sections, as illustrated in the opposite figure. When he spins, the pointer lands randomly on one section. Find each of the following:



- a The probability that the pointer lands
on a number greater than or equal to 4.
- b The probability that the pointer lands on a number divisible by 3.

First: Choose the correct answer:

- 1 If you multiply 2×10^4 by 5×10^2 , what is the result in scientific notation?
 a 10×10^7 b 1×10^8 c 1×10^7 d 1×10^6
- 2 Which of the following equals $\sqrt[3]{27x^3}$?
 a $3x$ b $9x$ c $3x^2$ d $3|x|$
- 3 $4x(2x+3) = \dots\dots\dots$
 a $8x^2 + 12x$ b $4x^2 + 12x$ c $8x^2 + 7x$ d $6x^2 + 12x$
- 4 What is the image of point $(2, -2)$ by the translation $(-2, 2)$ followed by the translation $(3, -1)$?
 a $(5, -2)$ b $(4, -2)$ c $(5, -1)$ d $(3, -1)$
- 5 If a trapezium has a height of 8cm and a middle base length of 7.5cm, its area= $\dots\dots\dots$ square centimeters.
 a 7.5 b 15 c 30 d 60
- 6 The image of point $(-1, -4)$ by reflection in the $\dots\dots\dots$ is $(-1, 4)$.
 a x -axis b y -axis c origin point d otherwise
- 7 The volume of a cuboid whose dimensions are $4a$ cm, $2a$ cm, and $2a$ cm, is $\dots\dots\dots$ cm^3 .
 a $9a$ b $20a^2$ c $16a^3$ d $20a^3$
- 8 $6x^5 \div 2x^2 = \dots\dots\dots$
 a $3x^2$ b $3x^3$ c $3x$ d $2x^3$
- 9 The probability of a certain event is $\dots\dots\dots$.
 a 0 b 1 c $\frac{1}{2}$ d $\frac{1}{3}$

Second: Answer the following:

- 1 Write in the simplest form: $\frac{9x^3 - 15x^2 + 21x^4}{-3x}$
- 2 Simplify: $\frac{a^7 \times a^8 \times a^2}{a^3 \times a^9 \times a^5} = \dots\dots\dots$ (Where $a \neq 0$)
- 3 Draw rectangle ABCD with vertices A(1, 2), B(1, 3), C(5, 3), and D(5, 2). Then, draw its image under reflection in the x -axis.
- 4 Simplify: $\frac{14x - 21}{7} + \frac{28x}{-7}$
- 5 Find the value of: $(3x - 2)^2$
- 6 Draw angle ABC of measure 70° , then bisect it.
- 7 A fair die was rolled 150 times and the number appearing on the upper face was observed. Calculate the expected number of:
 - a The number 2 appearing = $\dots\dots\dots$
 - b The number 5 not appearing = $\dots\dots\dots$

First: Choose the correct answer:

- 1 $x^9 \div \dots = x^6$
 a x^6 b x^3 c x^{12} d x^{27}
- 2 If $\sqrt{x} = 3$, what is the value of x^2 ?
 a 1 b 3 c 81 d +9
- 3 What is the product of $(2x + 1)(x + 3)$?
 a $2x^2 + 7x + 3$ b $2x^2 + x + 3$
 c $x^2 + 7x + 3$ d $2x^2 + 7x + 4$
- 4 What is the image of point $(-3, 5)$ by a translation $(-2, 1)$ followed by a translation $(0, -3)$?
 a $(-5, 3)$ b $(-1, -3)$ c $(-5, -3)$ d $(5, 3)$
- 5 The parallel sides of a trapezium are 4cm and 7cm, and the height is 4cm. What is its area?
 a 20 cm^2 b 22 cm^2 c 28 cm^2 d 32 cm^2
- 6 If point $A'(2, -5)$ is the image of point A by the translation:
 $(x, y) \rightarrow (x, y - 2)$, then point A is
 a $(2, -3)$ b $(2, 7)$ c $(0, -2)$ d $(0, 7)$
- 7 What is the sum of 4.5×10^2 and 3.0×10^3 ?
 a 3.45×10^3 b 3.45×10^2 c 3.45×10^4 d 3.45×10^5
- 8 $2p(3p^2 + 4p - 5) = \dots$
 a $6p^3 + 8p^2 - 10p$ b $6p^3 + 4p - 5$
 c $6p^3 + 8p^2 + 10p$ d $6p^3 - 8p^2 - 10p$
- 9 If we draw a ball from a bag containing 2 red balls, 3 blue balls, and 1 green ball, the probability of drawing a blue ball is
 a $\frac{1}{3}$ b $\frac{1}{2}$ c $\frac{1}{6}$ d $\frac{1}{4}$

Second: Answer the following:

1 Calculate: $12 - (-5)^0 + (3^3 + 9^2)$

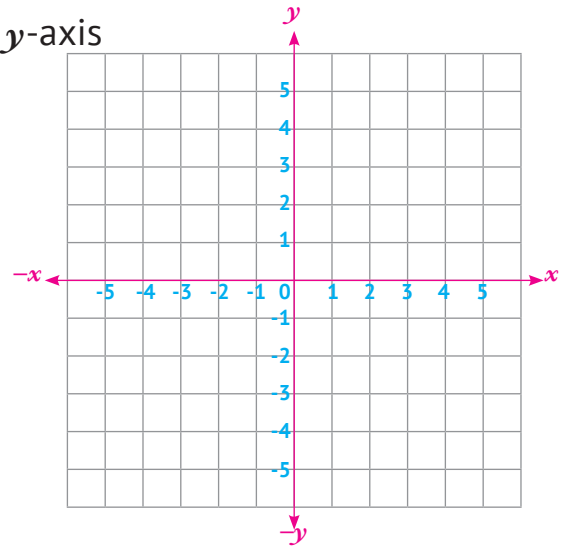
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2 Find the solution set in $\mathbb{Z}$: $2x - 1 \leq x + 3$

.....

3 Draw line segment MN, in which M(-4,-5) and N(-2,-1). Then, draw its image by reflection in: **a** The x -axis **b** The y -axis

4 Divide $(x^2 - 4x - 12) \div (x + 2)$.



5 Multiply $-3x^2 (4x^3 - 2x + 5)$.

6 A trapezoid-shaped garden has two parallel sides of lengths 8 meters and 12 meters, and its height is 5 meters. What is the area of the garden?

.....

7 From the set of numbers $\{1, 6, 7, 8\}$, form a two-digit number using different digits. Find the probability of the event that:

a The Tens digit of the number is smaller than the Ones digit:

b The number is greater than 70:

First: Choose the correct answer:

- 1 If $x^2 = 64$, what is the value of x ?
 a 8 b -8 c ± 8 d 16
- 2 What is the result of dividing 9×10^6 by 3×10^2 ?
 a 3×10^4 b 3×10^8
 c 30×10^4 d None of the previous
- 3 What is $(4x^2 + 8x) \div 4x$?
 a $x + 2$ b $x - 4$ c $x + 4$ d $x - 2$
- 4 The area of a rhombus is 96cm^2 , and the length of one diagonal is 12 units.
 What is the length of the other diagonal?
 a 16 b 18 c 20 d 24
- 5 What geometric transformation is equivalent to the translation (2, 4) followed the translation (1, -3)?
 a (3, 1) b (1, -1) c (2, 1) d (3, 7)
- 6 Which rotation makes the image of point C (3, 5) become C' (-5, 3)?
 a $R(O, 90^\circ)$ b $R(O, -90^\circ)$ c $R(O, 360^\circ)$ d $R(O, 180^\circ)$
- 7 If a rectangle has a length of 6m, and a width of 2m, then its area is
 a 12m^2 b 12m^3 c 8m^2 d 8m^3
- 8 $(4x^2 + 12x + 9) \div (2x + 3) = \dots\dots\dots$
 a $(x + 2)$ b $(x - 2)$ c $(2x + 3)$ d $(x - 3)$
- 9 A fair coin is tossed twice. What is the probability of getting a head once?
 a $\frac{1}{4}$ b $\frac{1}{2}$ c $\frac{3}{4}$ d 1

Second: Answer the following:

1 Simplify: $5x(2x - 3) + 3x(x + 4)$

.....

2 The area of a square is 128cm^2 . What is the length of its diagonal?

.....

3 Using prime factors and exponents, write 36:

4 Find the solution set in $\mathbb{N}$: $10 - 5x \leq 20$

.....

5 If a rectangle has a length of $4xy$ cm and a width of $3x$, find its area in terms of x and y .

.....

6 Draw line segment $\overline{KL}$ of length 5cm, then bisect it using a ruler and a compass at point M. Show the steps of the solution.

7 Indicate which of the following experiments is random and which is not:

a Drawing a ball from a bag containing a white ball, a yellow ball, a red ball, and a green ball, all identical, and observing its color.....

b Rolling a fair die where all faces are numbered 4

First: Choose the correct answer:

- 1 What is the scientific notation for the number 0.00072?

a 7.2×10^{-4} b 7.2×10^4 c 72×10^{-5} d 0.72×10^{-3}
- 2 If $x = \sqrt{\frac{1}{16}}$, what is the value of x^3 ?

a $\frac{1}{4}$ b $\frac{1}{16}$ c $\frac{1}{64}$ d $\frac{1}{256}$
- 3 The quotient of $(4x^2 + 8x) \div 4x$ is

a $x + 2$ b $x - 10$ c $x + 10$ d $x - 2$
- 4 If (a, b) is translated to (a + 5, b - 3), and the image is (7, -4), what is the original point?

a (2, -1) b (12, -7) c (2, -7) d (12, -1)
- 5 The area of a rhombus is 49cm^2 , and one diagonal is twice the other. What are the lengths of the diagonals?

a 6 and 12 b 9 and 18 c 7 and 14 d 8 and 16
- 6 The image of point (-3, -4) by rotation about the origin with an angle of measure 180° is

a (3, 4) b (-3, 4) c (3, -4) d (-3, -4)
- 7 If $x \in \mathbb{N}$, then the S.S of the inequality $-x \geq 5$ is

a $\{-5, -6, -7, \dots\}$ b $\{5, 6, 7, \dots\}$ c $\{-4\}$ d $\emptyset$
- 8 $4a^5b \times 6a^3b^2 \times 3a^2 = \dots\dots\dots$

a $72a^{10}b^3$ b $72a^{10}b^2$ c $72a^9b^3$ d $72a^9b^2$
- 9 If a ball is drawn randomly from a box containing 50 identical balls, of which 10 are white and the rest are red and black. What is the probability that the drawn ball is not white?

a $\frac{1}{35}$ b $\frac{1}{5}$ c $\frac{4}{5}$ d $\frac{34}{35}$

Second: Answer the following:

- 1 Using prime factors and exponents, write: 72.
- 2 Find the product of $(-5a + 3)^2 =$
- 3 Draw an angle of measure 120° , then bisect it using a ruler and a compass.
Verify by measuring that they are equal in measure.
- 4 Divide: $x^2 + 7x + 12$ by $x + 3$.
- 5 Multiply: $-2x^2(3x^3 - 4x + 7)$
- 6 Using the square lattice, draw $\triangle ABC$, where $A(2, 2)$, $B(4, 3)$, and $C(3, 4)$. What is the image of $\triangle ABC$ by the translation $(x, y) \rightarrow (x - 3, y + 2)$?
- 7 A bag contains 50 identical marbles. If Hani randomly draws a marble and he finds it red, and the probability of drawing a red marble equals $\frac{2}{5}$, find the number of red marbles in the bag.

First: Choose the correct answer:

- 1 $\frac{1}{4}$ of milliard =..... (in scientific notation)
 a 2.5×10^6 b 2.5×10^7 c 2.5×10^8 d 2.5×10^9
- 2 If a fair coin is flipped three times in a row, the probability of getting heads all three times is
 a $\frac{1}{8}$ b $\frac{1}{4}$ c $\frac{1}{2}$ d $\frac{1}{6}$
- 3 If $(x + 3)(x - 2) = x^2 + bx + c$, then the value of c is
 a -1 b 1 c 6 d -6
- 4 $\div (-3a^2b) = 5ab^2$
 a $-15a^3b^3$ b $15a^3b^3$ c $-15a^2b^2$ d $-5a^3b^3$
- 5 A trapezium whose parallel bases are 15cm. and 11cm. long. What is the length of its middle base?
 a 26cm. b 15cm. c 13cm. d 11cm.
- 6 Which of the following points is the image of the point $(-1, 3)$ by reflection in x-axis?
 a $(1, 3)$ b $(-1, -3)$ c $(1, -3)$ d $(3, -1)$.
- 7 The Solution set of equation in Z: $x^3 + 26 = -1$
 a -9 b 9 c -3 d 3
- 8 If the point $(c, -5)$ is the image of the point $(4, 3)$ by the translation $(x, y) \rightarrow (X + 1, y - d)$, then $d - c = \dots\dots$
 a 8 b 9 c 3 d 2
- 9 The rotation which makes the image of point C $(4, 2)$ become $C'(-2, 4)$ is ...
 a $R(O, 90^\circ)$ b $R(O, -90^\circ)$ c $R(O, 360^\circ)$ d $R(O, 180^\circ)$

Second: Answer the following:

- 1 Find the solution set in $\mathbb{Q}$: $(x - 2)^3 + 3 = -5$

.....

.....

- 2 Find the value: $\sqrt{2^2 + 3^2 + 12}$

.....

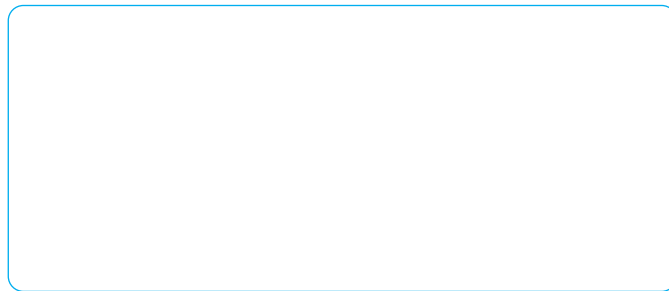
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- 3 A school has $54x^5 + 36x^4$ books to be divided among $6x^2$ shelves.
How many books will each shelf get in terms of x ?

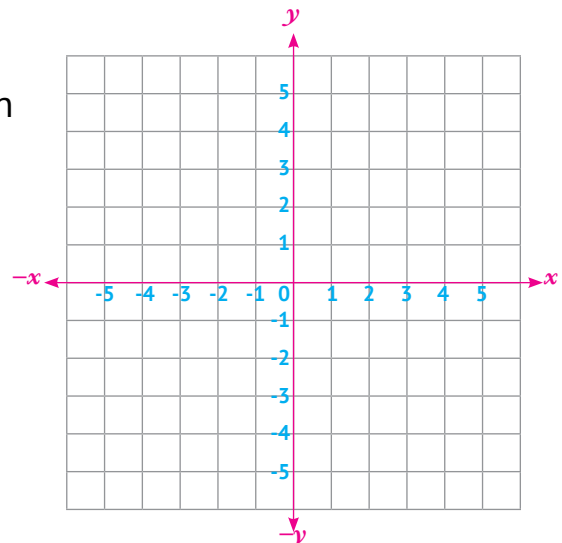
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- 4 Draw an angle of measure 100° , then bisect it using a ruler and compass.



- 5 Draw image of triangle ABC where
A (-4, 2), B (-1, 1), C (-3, 5) by translation
(6, -2)

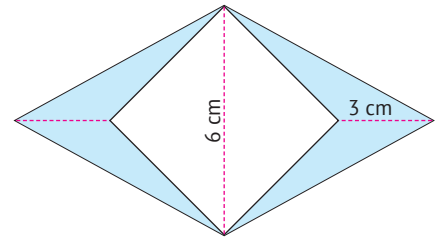


- 6 Calculate the area of shaded part between the rhombus and the square in the opposite figure

.....

.....

.....



- 7 The set $\{3, 2, 6\}$ is used in writing a 2_digit number, write each of the following events:

a The tens digit is odd.

b The ones digit is even.

.....

.....

.....

.....

Model

7

First:

Choose the correct answer:

- 1 If $\frac{3}{x} = \frac{x}{3}$, then $x = \dots\dots\dots$
 a 3 b ± 3 c ± 9 d -3
- 2 A cube its edge length is 5a unit lengths, then its volume is
 a $15a^3$ b $100a^2$ c $125a^3$ d $150a^2$
- 3 The parallel bases of a trapezium are 8cm. and 12cm, and the height is 5cm. What is its area?
 a 200cm^2 b 100cm^2 c 50cm^2 d 240cm^2
- 4 $12a^3b^2 \div 3a^2b = \dots\dots\dots$
 a 4ab b $4a^2b$ c $4a^2b^2$ d $4a^3b$
- 5 The S.S. of the inequality: $5 - 2x < 1$ in $\mathbb{Z}$ is
 a {3,4, 5} b {2,1,0,-1,} c {3 , 4, 5, 6} d $\emptyset$
- 6 If $0.0000503 = m \times 10^{-5}$, then $m = \dots\dots\dots$
 a 503 b 5.03 c 50.3 d 0.503
- 7 If $B' (4 , -3)$ is the image of B by translation $(x , y) \rightarrow (x + 2 , y + 5)$, then the point B is
 a (2,-8) b (6,-8) c (2, 2) d (6, 2)
- 8 What rotation makes the image of point H (-8, 2) become $H' (-2 , -8)$?
 a $R(O, 180^\circ)$ b $R(O, 360^\circ)$ c $R(O , - 90^\circ)$ d $R(O, 90^\circ)$
- 9 What will be the probability of getting odd numbers if a die is thrown?
 a $\frac{1}{2}$ b 1 c $\frac{4}{6}$ d $\frac{1}{3}$

Second: Answer the following:

- 1 Find the solution set of the following inequality in Z : $2(x + 5) - 3 < 9$

.....

.....

- 2 Find in simplest form: $(3x - 2)^2 - (3x - 2)(3x + 2)$

.....

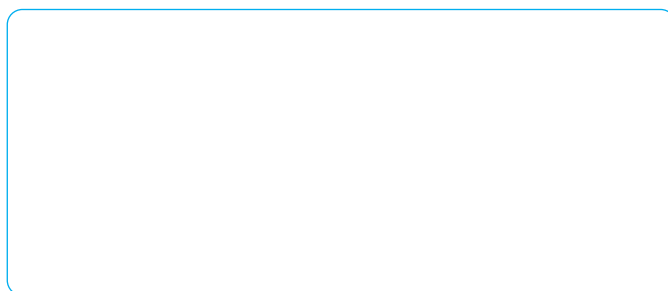
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- 3 Find the quotient of dividing: $(6x^6 - 18x^4 - 12x^3) \div 6x^3$

.....

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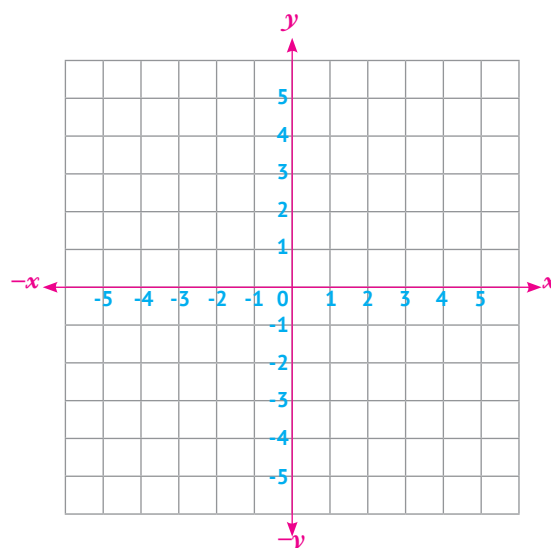
- 4 Draw the triangle ABC where $AB = 4\text{cm}$, $BC = 3\text{cm}$, and, $m(\angle A) = 90^\circ$
Then determine the type of triangle according to its sides.



- 5 Draw image of triangle ABC where

$A(-6, -1)$, $B(-2, -1)$, $C(-5, -6)$

by rotation $R(0, 270^\circ)$



- 6 A square, whose area equals the area of the rectangle whose dimensions are 2cm, and 9cm, find the length of its diagonal.

.....

.....

- 7 Find the value of $(\frac{3^3 \times 3^{-2}}{3^{-1} \times 3^4})^{-2}$ “In the simplest form.”

.....

.....

- 8 A bag contains 25 identical cards numbered from 1 to 25. One card is drawn randomly, and the number on the drawn card is recorded. Write each of the following events:

- a** Event (A) is the event of drawing a number less than 4.
- b** Event (B) is the event of drawing a number that is a multiple of 6.
- c** Event (C) is the event of drawing an odd number that is divisible by 5.

.....

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.....

First: Choose the correct answer:

- 1 $\sqrt{a} = \sqrt[3]{125}$, then $a = \dots\dots\dots$
 a 5 b ± 5 c 25 d ± 25
- 2 $(-3a^4b) \times 2ab \times (-6a) = \dots\dots\dots$
 a $-36a^6b^2$ b $36a^6b^2$ c $-7a^4b$ d $-6a^4b^2$
- 3 $(12x^2 + 6x) \div 3x = \dots\dots\dots$
 a $9x + 2$ b $4x + 2$ c $9x + 3$ d $3x + 9$
- 4 The area of a rhombus is 60cm^2 , and the length of one diagonal is 12cm.
 What is the length of the other diagonal? $\dots\dots\dots$
 a 10 b 20 c 5 d 40
- 5 If $x + y = 3$, $x - y = 7$, then find the value of $x^2 - y^2$
 a 10 b -10 c 21 d -40
- 6 If the image of point $(2x - 4, 5)$ by reflection in y-axis is itself, then the
 value of x is $\dots\dots\dots$
 a 0 b -2 c 2 d -4
- 7 The S.S. of the inequality: $17 - 3x < 2$ in N is.
 a $\{4, 3, 2, 1, 0, \dots\}$ b $\{4\}$ c $\{6, 7, 8, \dots\dots\dots\}$ d N
- 8 If: $0.00079 = 7.9 \times a$, then $a = \dots\dots\dots$
 a 10^3 b 10^{-3} c 10^{-4} d 10^4
- 9 What is the probability of getting two numbers their sum are 7 on the upper
 faces if two distinct dice are thrown?
 a $\frac{5}{24}$ b $\frac{7}{36}$ c $\frac{5}{36}$ d $\frac{1}{6}$
- 10 What is the image of the point $(5, -2)$ by a translation of 5 units in the negative
 direction of the x-axis?
 a $(5, -7)$ b $(0, -2)$ c $(10, -2)$ d $(5, -3)$

Second: Answer the following:

- 1 Without finding the values, find the median of the numbers:

$$(-2)^3, 3^2, \sqrt[3]{-27}, \sqrt{64}, \frac{1}{3^{-3}}$$

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- 2 If $x=2$, $y=3$, then find the value of $x^y + y^x$

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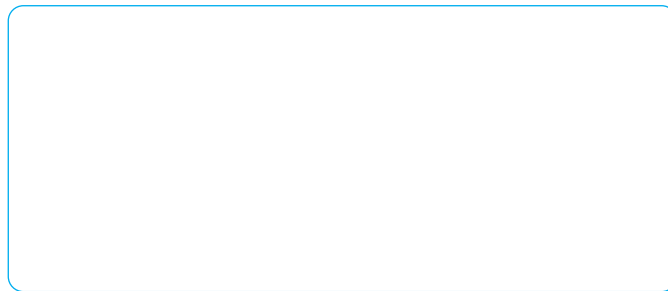
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- 3 Find in simplest form: $(x-1)(x-4) - (x-2)(x+2)$

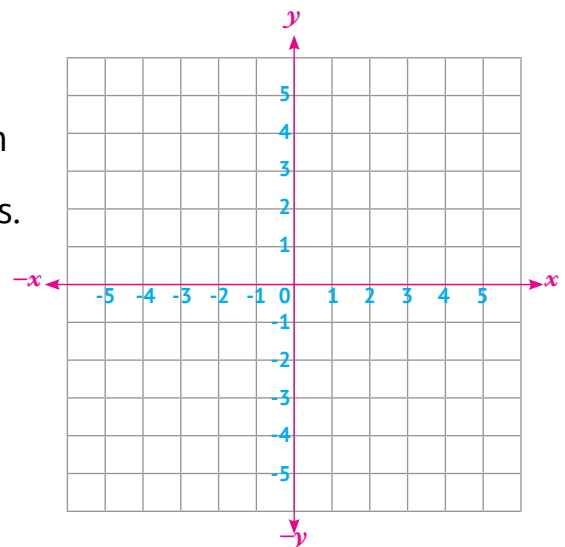
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- 4 Draw the line segment of length 5cm, then bisect it using a ruler and compass at point C, Showing the steps of solutions.



- 5 Draw image of triangle OBC where
O (0, 0), B (4, 0), C (-1, 2) by reflection in
x-axis followed by reflection in y – axis.



- 6 The set $\{1, 2, 3\}$ is used to form 2-digit number, write the probability of each of the following events:

a The tens digit is even:

b The sum of the two digits is 5:

Model 9

First: Choose the correct answer:

- 1 $\sqrt{10^2 - 6^2} = \dots\dots\dots$
 - a 16
 - b ± 4
 - c 8
 - d 4
- 2 $(x - 2)(x + 5) = \dots\dots\dots$
 - a $x^2 + 3x - 10$
 - b $x^2 - 3x - 10$
 - c $x^2 - 3x + 10$
 - d $x^2 + 3x + 10$
- 3 If $9m \times \dots\dots\dots = 27m^3$ what is the missing term?
 - a 3m
 - b $3m^2$
 - c $18m^3$
 - d $9m^2$
- 4 What is the image of the point (5, -7) after reflection in the x-axis?
 - a (5, 7)
 - b (-5, 7)
 - c (-5, -7)
 - d (5, -7)
- 5 If the speed of light is equal to 300,000 km/sec, what is the speed of light in m/sec?
 - a 3×10^5
 - b 3×10^7
 - c 3×10^8
 - d 3×10^{10}
- 6 The S.S. of the inequality: $4 - x > 3$ in N is.
 - a { 0, -1, -2, -3, ... }
 - b { 0, 1, 2, 3, 4, ... }
 - c {0}
 - d $\emptyset$
- 7 What is the Image of the point (-3, 5) by translation (2, -1) followed by translation (0, -3)?
 - a (-1, 0)
 - b (-1, -1)
 - c (-1, 1)
 - d (-1, 2)
- 8 Which rotation makes the image of the point (4, 2) to become (2, -4)?
 - a $R(O, 180^\circ)$
 - b $R(O, 360^\circ)$
 - c $R(O, -90^\circ)$
 - d $R(O, 90^\circ)$
- 9 On experiment of rolling a fair die once, what is the probability of getting a number divisible by 3?
 - a zero
 - b $33 \frac{1}{3} \%$
 - c 50 %
 - d 75 %

Second: Answer the following:

- 1 Find in simplest form: $4x(3x - 2) + 2x(x + 2)$, then find the numerical value of the resulting expression when $x = 1$

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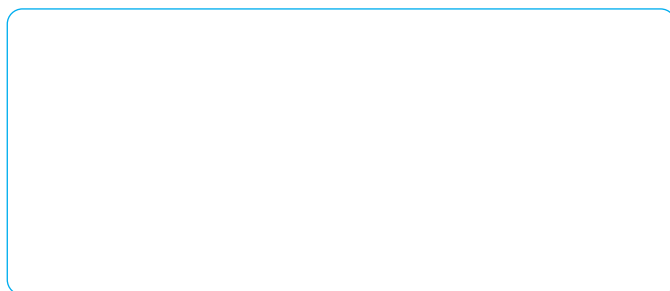
- 2 A school has $45x^4 + 25x^3$ books to be divided among $5x$ shelves. How many books will each shelf get in term of x ?

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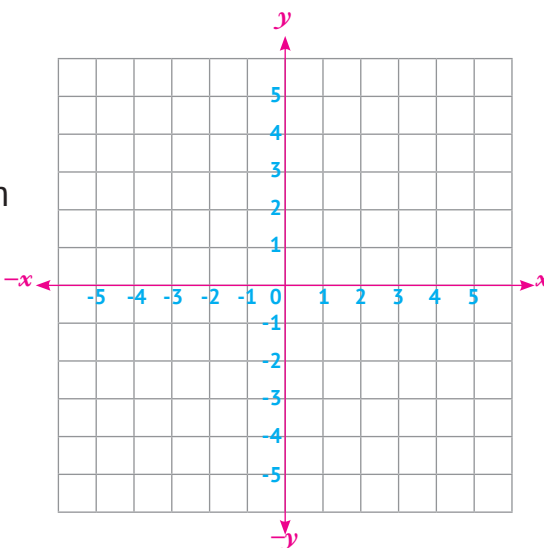
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- 3 Draw triangle XYZ where: $XY = 5\text{cm}$, $YZ = 6\text{cm}$, $XZ = 5\text{cm}$, Determine its type according to the measures of its angles.



- 4 Draw parallelogram ABCD where $A(-1, 1)$, $B(2, 1)$, $C(4, 3)$, and $D(1, 3)$.
What is the image of the parallelogram by the translation $(x, y) \rightarrow (x - 2, y - 1)$?



- 5 Find the length of the diagonal of a square whose area is equal to the area of a rhombus with diagonal lengths of 6 meters and 24 meters

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- 6 Find the value of: $(\frac{-2}{3})^2 + \sqrt{\frac{25}{4}} + \sqrt[3]{\frac{125}{64}}$ "In the simplest form."

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- 7 A card was drawn randomly from a set of identical cards numbered from 1 to 15. Find the probability that the drawn card carries:

a A number greater than 15.

.....

.....

b An odd number.

.....

.....

c A number divisible by 5:

.....

.....

First: Choose the correct answer:

- 1 $\sqrt[3]{\sqrt{64}}$
 a 16 b 8 c 4 d 2
- 2 $6x^2 \div 2x = \dots\dots\dots$
 a $3x^2$ b $3x^3$ c $3x$ d $2x^3$
- 3 Multiply: $(x - 3)(x + 4) = \dots\dots\dots$
 a $x^2 - 7x - 12$ b $x^2 + x - 12$ c $x^2 - x - 12$ d $x^2 + x + 12$
- 4 The height of a trapezium is 4cm, and the area is 40cm^2 . If one parallel side is 8cm, what is the length of the other parallel side?cm
 a 10 b 12 c 14 d 20
- 5 Which of the following is the solution for the inequality $2x - 3 > 5$?
 a $x > 4$ b $x > 1$ c $x < 4$ d $x < 1$
- 6 If the thickness of a sheet of paper is 0.012cm, then a ream of 400 sheets is of height= cm
 a 48×10^{-3} b 48×10^{-2} c 4.8×10^{-1} d 4.8×10^0
- 7 Which translation makes the image of the point (4 , 5) to become (-2 , 1)?
 a (-6 , 6) b (-6 , -4) c (2 , -4) d (6 , -6)
- 8 The Image of the point (-2, 3) by rotation about the origin with an angle of measure 90° with anti-clock wise direction is
 a (3 , 2) b (-3 , -2) c (-3 , 2) d (2 , -3)
- 9 If a fair die is rolled, the probability of getting a number less than 5 is
 a $\frac{2}{3}$ b $\frac{1}{2}$ c $\frac{1}{3}$ d $\frac{1}{6}$

Second: Answer the following:

- 1 Find in simplest form: $(x - 2)^2 - (x - 2)(x + 2)$

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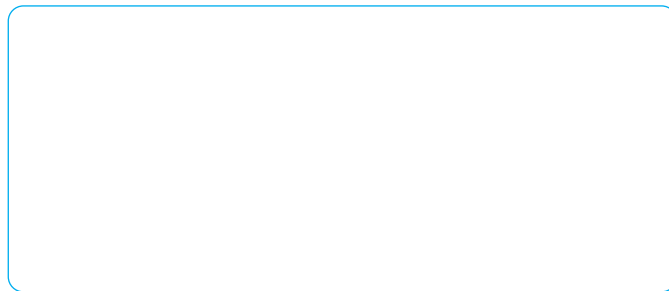
- 2 Find the quotient of dividing: $-16 + x^2 - 6x$ by $x + 2$ where $x \neq -2$

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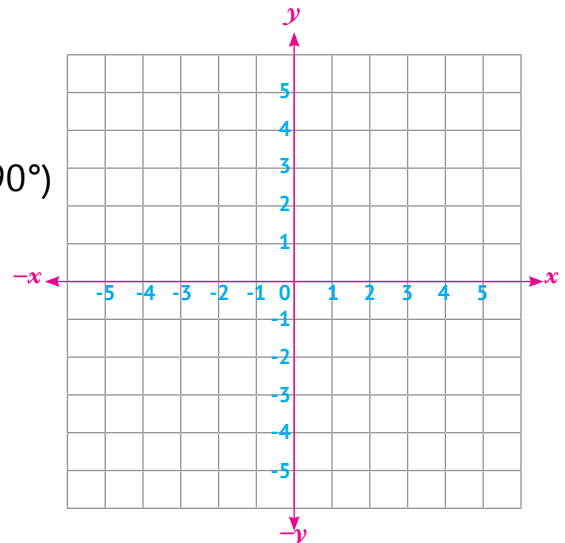
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- 3 Draw the triangle ABC, where: $AB = 5\text{cm}$, $m(A) = 60^\circ$, $m(\angle B) = 60^\circ$, and determine by measuring the type of the triangle according the lengths of its sides.



- 4 Draw image of triangle ABC where
 $A(-4, -1)$, $B(-2, -3)$, $C(-3, -6)$ by rotation
 $R(o, 180^\circ)$ followed by rotation $R(o, 90^\circ)$



- 5 The area of a triangle is 36cm^2 , and its height is 12cm . What is the length of its base?

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- 6 Find the value of: $\frac{(-4)^4 \times (-4)^3 \times 4^2}{(-4)^6 \times (-4)^4}$ "In the simplest form."

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- 7 A jar contains 16 candies: 8 chocolate, 5 strawberry , and 3 Lemon. If a candy is chosen randomly, find the probability that the candy is:

a Strawberry.

b Not chocolate.

c Either lemon or chocolate.

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Revision Book Guide Answers

Final Exams

Model 1

First

- | | | |
|----------|------------------------|--------------------|
| 1 4 | 2 1.5×10^{-3} | 3 Z^{-} |
| 4 (5, 3) | 5 1 | 6 120cm^2 |
| 7 $3a^3$ | 8 $(2x -)$ | 9 $\frac{1}{3}$ |

Second

- $2 \times 7 \times 10 = 140$
- $3x + 7$
- Draw by yourself.
- $x^2 - 9 = 7$ $x = 16$ s.s. = {4, -4}
- $18a^2b + 6ab^2 - 21ab$
- Area = $\frac{1}{2} \times 7 \times 14 = 49\text{cm}^2$
- a $\frac{5}{8}$
b $\frac{2}{8} = \frac{1}{4}$

Model 2

First

- | | | |
|-------------------|----------|----------------|
| 1 1×10^7 | 2 $3x$ | 3 $8x^2 + 12x$ |
| 4 (3, -1) | 5 60 | 6 x -axis |
| 7 $16a^3$ | 8 $3x^3$ | 9 1 |

Second

- $-3x^2 + 5x - 7x^3$
- 1
- Draw by yourself.
- $2x - 3 - 4x = -2x - 3$
- $9x^2 - 12x + 4$
- Draw by yourself.
- a $\frac{1}{6} \times 150 = 25$ times.
b $\frac{5}{6} \times 150 = 125$ times.

Model 3

First

- | | | |
|----------------------|-----------------------|-------------------|
| 1 x^3 | 2 81 | 3 $2x^2 + 7x + 3$ |
| 4 (-5, 3) | 5 22cm^2 | 6 (2, -3) |
| 7 3.45×10^3 | 8 $6p^3 + 8p^2 - 10p$ | |
| 9 $\frac{1}{2}$ | | |

Second

- $12 - 1 + 27 + 81 = 119$
 - $x \leq 4$ s.s. = {4, 3, 2, 1, 0, -1,}
 - Draw by yourself.
 - $x - 6$
 - $-12x^5 + 6x^3 - 15x^2$
 - Area = $\frac{4}{6} (12+8) \times 5 = 10 \times 5 = 50 \text{ m}^2$
 - S = {16, 17, 18, 61, 67, 68, 71, 76, 78, 81, 86, 87}
- a $\frac{6}{12} = \frac{1}{2}$ b $\frac{6}{12} = \frac{1}{2}$

Model 4

First

- | | | |
|------------------|-------------------|--------------------|
| 1 ± 8 | 2 3×10^4 | 3 $x + 2$ |
| 4 16cm | 5 (3, 1) | 6 $R(0, 90^\circ)$ |
| 7 12m^2 | 8 $(2x + 3)$ | 9 $\frac{1}{2}$ |

Second

- $13x^2 - 3x$
- $d = \sqrt{128 \times 2} = 16\text{cm}$
- $2^2 \times 3^2$
- $-5x \leq 10$ $x \geq -2$ s.s. = N
- Area = $L \times w = (4xy)(3x) = 12x^2y$
- Draw by yourself.
- a Random. b Not random.

Model 5

First

- 1 7.2×10^{-4} 2 $\frac{1}{64}$ 3 $x + 2$
 4 $(2, -1)$ 5 7 and 14 6 $(3, 4)$
 7 $\emptyset$ 8 $72a^{10}b^5$ 9 $\frac{4}{5}$

Second

- 1 $2^3 \times 3^2$ 2 $25a^2 - 30a + 9$
 3 Draw by yourself. 4 $x + 4$
 5 $-6x^5 + 8x^3 - 14x^2$ 6 Draw by yourself.
 7 $\frac{2}{5} \times 50 = 20$ marbles.

Model 6

First

- 1 2.5×10^{-4} 2 $\frac{1}{8}$ 3 -6
 4 $-15a^3b^3$ 5 13cm 6 $(-1, -3)$
 7 -3 8 3 9 $R(O, 90^\circ)$

Second

- 1 $(x - 2)^3 = -8$
 $x - 2 = -2$ $x = 0$ S.S $\{0\}$
 2 $\sqrt{4 + 9 + 12} = \sqrt{25} = 5$
 3 $(54x^5 + 36x^4) \div 6x^2 = 9x^3 + 6x^2$
 4 Draw by yourself. 5 Draw by yourself.
 6 Area of rhombus = $\frac{1}{2} \times 6 \times 12 = 36\text{cm}^2$
 Area of square = $\frac{1}{2} \times 6 \times 6 = 18\text{cm}^2$
 Area of shaded part = $36 - 18 = 18\text{ cm}$
 7 a $\{32, 36, 33\}$ b $\{22, 62, 32, 26, 66, 36\}$

Model 7

First

- 1 ± 3 2 $125a^3$ 3 50 cm^2
 4 $4ab$ 5 $\{3, 4, 5, 6, \dots\}$ 6 5.03
 7 $(2, -8)$ 8 $R(O, 90^\circ)$ 9 $\frac{1}{2}$

Second

- 1 $2(x + 5) < 12$
 $(x + 5) < 6$ $x < 1$ S.S = $\{0, -1, -2, \dots\}$
 2 $= 9x^2 - 12x + 4 - 9x^2 + 4$
 $= -12x + 8$
 3 $x^3 - 3x - 2$
 4 Draw by yourself. 5 Draw by yourself.
 6 Area of rectangle = $2 \times 9 = 18$
 $\frac{1}{2}d^2 = 18$ $\therefore d = 6$
 7 A $\{1, 2, 3\}$
 B $\{6, 12, 18, 24\}$
 C $\{5, 15, 25\}$

Model 8

First

- 1 25 2 $36a^6b^2$ 3 $4x + 2$
 4 10 5 21 6 2
 7 $\{6, 7, 8, \dots\}$ 8 10^{-4} 9 $\frac{1}{6}$
 10 $(0, -2)$

Second

- 1 The order: $(-2)^3, \sqrt[3]{-27}, \sqrt{64}, 3^2, \frac{1}{3^{-2}}$
 The median is $\sqrt{64}$
 2 $2^3 + 3^2 = 8 + 9 = 17$
 3 $= x^2 - 5x + 4 = -x^2 + 4$
 $= -5x + 8$
 4 Draw by yourself. 5 Draw by yourself.
 6 A = $\{12, 22, 32\}$
 $P(A) = \frac{3}{9} = \frac{1}{3}$
 B = $\{23, 32\}$
 $P(B) = \frac{2}{9}$

Model 9

First

- 1 8 2 $x^2 + 3x - 10$ 3 $3m^2$
 4 (5, 7) 5 3×10^8 6 {0}
 7 (-1, 1) 8 $R(0, -90^\circ)$ 9 $33 \frac{1}{6} \%$

Second

- 1 $= 12x^2 - 8x + 2x^2 + 4x = 14x^2 - 4x$
 at $x = 1$ The value $= 14 - 4 = 10$
 2 $(45x^4 + 25x^3) \div 5x = 9x^3 + 5x^2$
 3 Draw by yourself. 4 Draw by yourself.
 5 Area of rhombus $= \frac{1}{2} \times 6 \times 24 = 72m^2$
 $\frac{1}{2}d^2 = 72$ $\therefore d = 12m$
 6 $\frac{9}{4} + \frac{5}{2} + \frac{5}{4} = 6$
 7 a $A = \emptyset$ $P(A) = 0$
 b $B = \{1, 3, 5, 7, 9, 11, 13, 15\}$ $P(B) = \frac{8}{15}$
 c $C = \{5, 10, 15\}$ $P(C) = \frac{3}{15} = \frac{1}{5}$

Model 10

First

- 1 2 2 $3x$ 3 $x^2 + x - 12$
 4 12 5 $x > 4$ 6 4.8×10^0
 7 (-6, -4) 8 (3, -2) 9 $\frac{2}{3}$

Second

- 1 $x^2 - 4x + 4 - x^2 + 4 = -4x + 8$
 2 The quotient $= x - 8$
 3 Draw by yourself.
 4 Draw by yourself.
 5 $36 = \frac{1}{2} \times b \times 12$ $\therefore b = 6cm$
 6 $\frac{(-4)^9}{(-4)^{10}} = (-4)^{-1} = \frac{-1}{4}$
 7 a $\frac{5}{16}$ b $\frac{8}{16} = \frac{1}{2}$ c $\frac{11}{16}$

حمل الآن

مجاناً وحصرياً

امتحانات رقم (4)

الترم الثاني



MODEL EXAM NO (1)**[1]****[A] Choose the correct answer:**

(1) In the experiment of throwing a coin twice, how many time of appearing a head at least?

- a) 1 b) 2 c) 3 d) 4

(2) Quarter of the number of 4^8 is

- a) 4^2 b) 4^4 c) 4^6 d) 4^{16}

(3) The height of a trapezium is 5.4 cm, and the length of its two parallel bases are 8 cm , 10 cm, then its area equals cm^2

- a) 84.6 b) 54 c) 97.2 d) 432

[B] Simplify to the simplest form:

$$\sqrt[3]{\frac{64}{125}} + \sqrt{\frac{9}{25}} - \left(\frac{14}{10}\right)^0$$

[2]**[A] Choose the correct answer:**

(1) If $0.000075 = 5 \times 10^n$, then the value of n is

- a) -5 b) -4 c) 4 d) 5

(2) $(X^3 + X^2 + X) \div X = \dots\dots\dots$

- a) $X^3 + X^2$ b) $X^2 + X$ c) $X^2 + X + 1$ d) Zero

(3) The image of point (3,4) with translation $(x,y) \rightarrow (x-4,y-2)$?

- a) (-1,-2) b) (-1,2) c) (1,-2) d) (2,1)

[B] Find the solution set of the following equation in Q:

$$(3X - 4)(3X + 4) - 9X^2 + 2X = 6$$

[3]

[A] Choose the correct answer:

(1) If $X^3 + 124 = -1$, then the value of X is

- a) -5 b) -4 c) 4 d) 5

(2) The image of the point $(-2, 4)$ with reflection in X-axis?

- a) $(4, 2)$ b) $(-4, 2)$ c) $(2, 4)$ d) $(-2, -4)$

(3) The area of rhombus whose diagonals 10 cm, 15 cm is Cm^2

- a) 37.5 b) 75 c) 150 d) 300

[B] Draw the line segment of length 4.5 cm and bisect it with compasses and ruler.

[4]

[A] If the quotient of dividing $X^3 - 25X$ by $X + 5$ is $X^2 + aX$, find the value of X? where $X \neq -5$.

[B] Find the solution set of the following inequality in N:

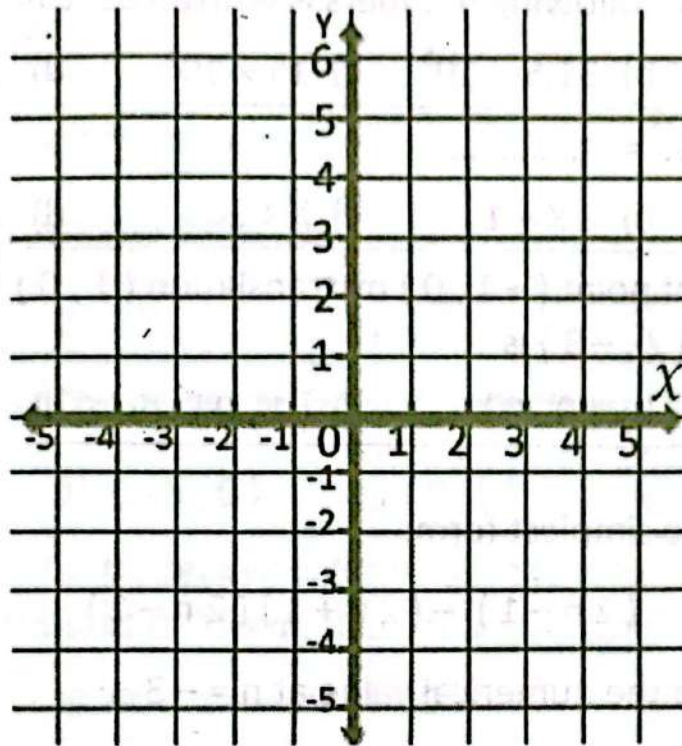
$$3X - 2 \leq 4$$

[5]

[A] On the coordinate plane draw the rectangle ABCD in which:

$$A(1, 1), B(3, 1), C(3, 6), D(1, 6)$$

Then find its image with rotation $R(O, 90^\circ)$



[B] In the experimental of throwing a regular die once, find the probability of appearing:

① A number more than 2.

② A prime number less than 4.



End of the questions

MODEL EXAM NO (2)**[1]****[A] Choose the correct answer:**

(1) Which of the following numbers is written as scientific notation

- a)
- $1.5 \times 10^{4.5}$
- b)
- 31.5×10^5
- c)
- 15×10^5
- d)
- 3.15×10^5

(2) $(X^3 + X^2) \div X^2 = \dots\dots\dots$

- a) X b)
- $2X + 1$
- c)
- $X + 1$
- d) Zero

(3) The image of point $(-1, 0)$ by translation $(1, 0)$ following by translation $(2, -3)$ is

- a)
- $(2, -3)$
- b)
- $(0, 0)$
- c)
- $(1, 0)$
- d)
- $(-1, 0)$

[B] Simplify in the simplest form:

$$(2n-1)^2 - (2n+1)(2n-1)$$

Then find the numerical value at $n = -3$ **[2] [A] Choose the correct answer:**

(1) The probability of appearing an even number when throwing a fair die once is

- a)
- $\frac{1}{2}$
- b)
- $\frac{2}{3}$
- c)
- $\frac{3}{4}$
- d)
- $\frac{5}{6}$

(2) $\sqrt{16 + 9} = 4 + \dots\dots\dots$

- a) 3 b) 2 c) 1 d) Zero

(3) The area of square whose diagonal 6 cm is cm^2

- a) 9 b) 18 c) 24 d) 36

[B] Simplify to the simplest form:

$$\sqrt[3]{\frac{125}{27}} + \sqrt{\frac{81}{25}} - \left(\frac{9}{5}\right)^0$$

[3]

[A] Choose the correct answer:

(1) Double the number 2^{10} is

- a) 2^{20} b) 2^{11} c) 4^{20} d) 4^{10}
-

(2) The image of the point $(5, 0)$ with reflection in X-axis?

- a) $(5, 0)$ b) $(-5, 0)$ c) $(0, 5)$ d) $(0, -5)$
-

(3) The height of a trapezium is 5 cm, and the sum of lengths of its two parallel bases is 16 cm, then its area equals cm^2

- a) 20 b) 40 c) 80 d) 60
-

[B] Draw angle of measure 100° and bisect it with ruler and compasses.

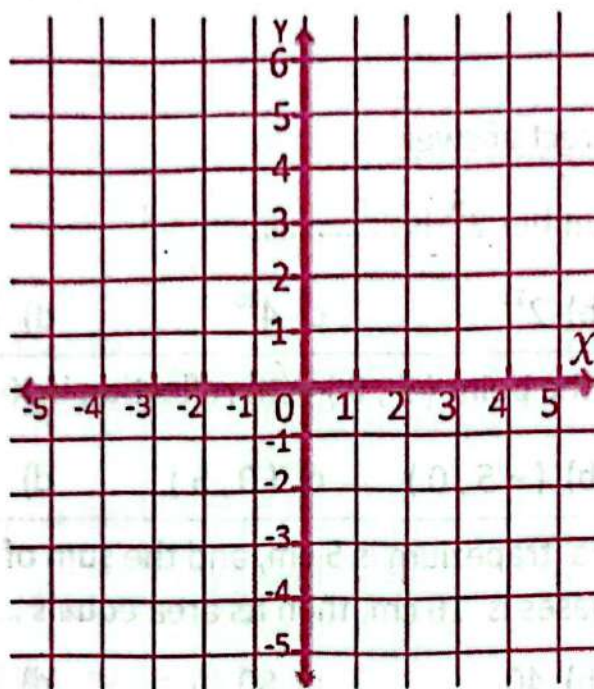
[4]

[A] Find the quotient of dividing $-3X^2 + X^3 - X + 6$ by $X - 2$, then find the numerical value at $X = 3$?

[B] Find the solution set of the following inequality in Q?

$$3(X - 7) \geq 7(X - 3)$$

[5]

[A] On the coordinate plane:Draw the $\triangle ABC$ in which $A(1, -2)$, $B(4, -4)$, $C(3, -1)$ Then find its image with rotation $R(O, -90^\circ)$ 

[B] A card is drawn randomly from eight cards numbered from 1 to 8, write the sample space and find the probability of the following events:

- ① Appearing an even number.
- ② Appearing a number divisible by 3.
- ③ Appearing a number more than or equal 6

*End of the questions*

MODEL EXAM NO (3)**[1]****[A] Choose the correct answer:**

(1) The probability of appearing a number 6 when throwing a fair die once is

- a) 1 b) Zero c) $\frac{1}{2}$ d) $\frac{1}{6}$

(2) $2^3 + 2^3 = \dots\dots\dots$

- a) 2^6 b) 2^9 c) 2^4 d) 4^6

(3) If the area of rhombus is 20 cm^2 , and one of its diagonal is 5 cm, then the **length** of other diagonal is

- a) 4 b) 8 c) 10 d) 15

[B] Find in the simplest form:

$$\left(\frac{5^3 \times 5^{-2}}{5^4 \times 5^{-1}} \right)^{-2}$$

[2] [A] Choose the correct answer:

(1) If $-\sqrt{25} = \sqrt[3]{y}$, then the value of Y =

- a) -5 b) -125 c) 5 d) 125

(2) $(3X - 7)^2 = aX^2 + bX + c$, then value of b is

- a) 21 b) 42 c) -21 d) -42

(3) If the image of the point $(7, 3a - 12)$ with reflection on X-axis is itself, then the value of a is

- a) -4 b) 3 c) 4 d) 12

[B] Find the solution set of the following equation in $\mathbb{Q}$:

$$(2X - 5)^2 + 20X = 50$$

[3]

[A] Choose the correct answer:

(1) Third of the number 3^x is.....

- a) 1^x b) $(\frac{1}{3})^x$ c) 3^{x+1} d) 3^{x-1}
-

(2) The image of the point $(-2, 1)$ is $(4, -5)$ with translation ...

- a) $(6, -6)$ b) $(2, -4)$ c) $(-6, -4)$ d) $(-6, 6)$
-

(3) The length of diagonal of the square whose area 450 cm^2 is

- a) 15 cm b) 30 cm c) 40 cm d) 90 cm
-

[B] Draw a line segment f length 6 cm and bisect it with ruler and compasses.

[4]

[A] Find the quotient of dividing $12 - 5X^2 + 6X^3 - 14X$ by $2X - 3$.

[B] Find the solution set of the following inequality in $\mathbb{Z}$?

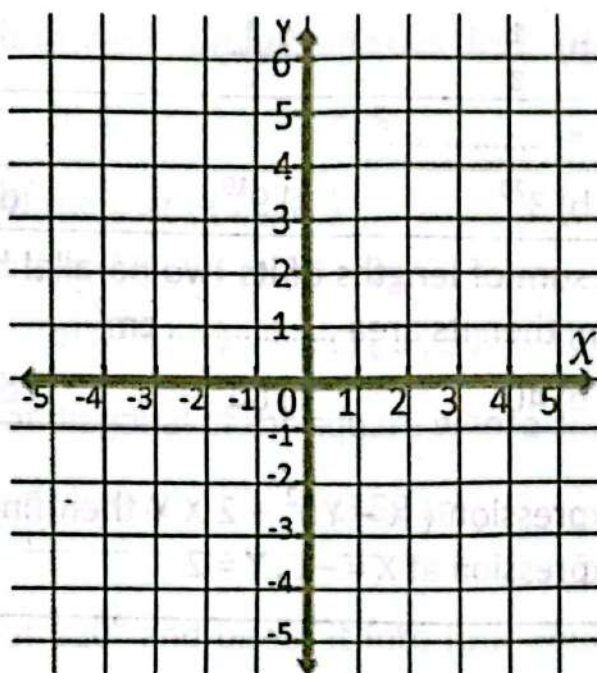
$$5X + 1 \leq 2(X + 2)$$

[5]

[A] In the coordinate plane:

Draw $\triangle ABC$ in which $A(0, 2)$, $B(4, 1)$, $C(3, 4)$

Then find its image by rotation $R(O, 180^\circ)$ following by rotation $R(O, 90^\circ)$



[B] From the following numbers $\{1, 2, 3, 4\}$ form a number of two different digits. Write the sample space and find the probability of following events:

- ① The tens digit is odd number
- ② Sum of two digits is 7
- ③ The number is divisible by 7

◆◆◆

End of the questions

MODEL EXAM NO (4)**[1]****[A] Choose the correct answer:**

(1) The probability of appearing an odd number when throwing a fair die once is

- a) 2 b) $\frac{1}{3}$ c) $\frac{1}{2}$ d) $\frac{1}{6}$

(2) $3^{10} + 3^{10} + 3^{10} = \dots\dots\dots$

- a) 3^{10} b) 3^{20} c) 9^{10} d) 3^{11}

(3) In trapezium, sum of lengths of its two parallel bases is 16 cm, its height 5 cm, then its area cm^2

- a) 20 b) 40 c) 80 d) 160

[B] Simplify the expression $(X - Y)^2 + 2XY$ then find the numerical value of the expression at $X = -1, Y = 2$

[2]**[A] Choose the correct answer:**

(1) $\sqrt{36} + \sqrt{16} = \sqrt{\dots\dots\dots}$

- a) 10 b) 52 c) 100 d) 120

(2) If $X + Y = 15, X - Y = 5$, then the value of $X^2 - Y^2 = \dots\dots\dots$

- a) 75 b) 20 c) 10 d) 3

(3) If the image of the point $(2, -3)$ with reflection on X-axis following by reflection in Y-axis is

- a) $(2, 3)$ b) $(-2, -3)$ c) $(-2, 3)$ d) $(3, 2)$

[B] Find the solution set of the following equation in Q:

$$\sqrt[3]{x} - 5 = 1$$

[3]

[A] Choose the correct answer:

(1) The greatest integer number satisfies the inequality $3 \leq X < 6$ is.

- a) 3 b) 4 c) 5 d) 6

(2) The image of the point $(2, -1)$

With translation $(X, Y) \rightarrow (X - 3, Y + 4)$ is

- a) $(-1, 5)$ b) $(-3, 4)$ c) $(5, 3)$ d) $(-1, 3)$

(3) The length of diagonal of the square whose area 50 cm^2 is

- a) 5 cm b) 10 cm c) 50 cm d) 100 cm

[B] Draw angle of 120° and bisect it into four equal parts with ruler and compasses.

[4]

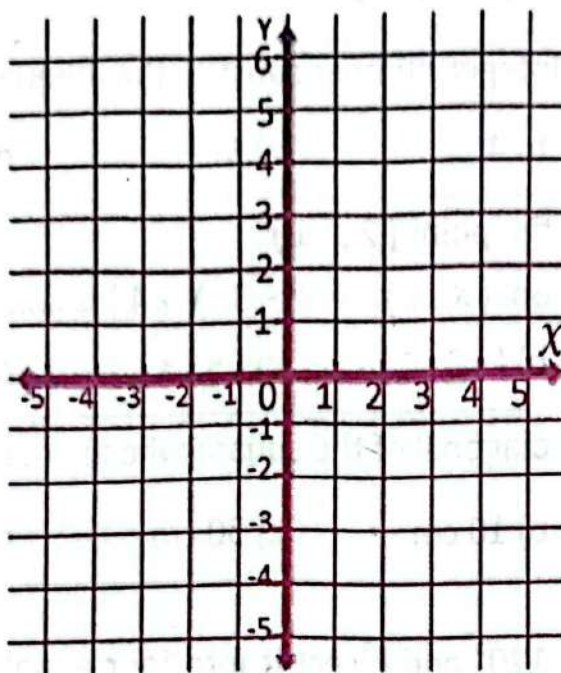
[A] The area of rectangle $35X^6 - 15X^5 + 40X^2$ square units, one of its dimensions is $5X^2$ unit length. Find the other dimension.

[B] Find the solution set of the following inequality in Z?

$$\frac{1}{2}X + 4 \geq -2$$

[5]

[A] In the coordinate plane:

Draw $\triangle ABC$ in which $A(-2, 1)$, $B(2, 1)$, $C(0, 3)$ Then find its image by rotation $R(O, 90^\circ)$.

[B] A card is drawn randomly from 25 cards numbered from 1 to 25,

find the probability that the card has:

① An even number

② A number divisible by 5

③ A number ≥ 20 *End of the questions*

MODEL EXAM NO (5)[1][A] Choose the correct answer:

(1) Which of the following may be a probability of an event?

- a) 1.2 b) -0.4 c) 275 % d) 75 %

(2) If $2^x = 5$, then $2^{x+1} = \dots\dots\dots$

- a) 6 b) 7 c) 10 d) 64

(3) In trapezium, the lengths of one of two parallel bases is 15 cm, its height 5 cm, its area 108 cm^2 , then the length of other base is $\dots\dots\dots \text{ cm}^2$

- a) 15 b) 4 c) 12 d) 27

[B] Write the result in scientific notation:

$$(9.3 \times 10^7) - (0.8 \times 10^8)$$

[2] [A] Choose the correct answer:

(1) Which inequality represents that twice number X is less than 5

- a)
- $2X < 5$
- b)
- $2X > 5$
- c)
- $X - 2 < 5$
- d)
- $X + 2 < 5$

(2) The image of the point $(0, -3)$ With translation $(X, Y) \rightarrow (X - 1, Y + 2)$ is $\dots\dots\dots$

- a)
- $(-1, -1)$
- b)
- $(-1, 1)$
- c)
- $(1, -1)$
- d)
- $(1, 1)$

(3) If the area of rhombus is 40 cm^2 , and one of its diagonal is 10 cm, then the length of other diagonal is $\dots\dots\dots$

- a) 80 b) 50 c) 4 d) 8

[B] Draw ΔABC , $AB = AC = 6$ cm, $BC = 7$ cm by using ruler and compasses.

[3]

[A] Choose the correct answer:

(1) $\sqrt{100 - 64} = 10 - \dots\dots\dots$

- a) -4 b) -6 c) 4 d) 6
-

(2) If $(X + 3)(X - 3) = X^2 - K$, then the value of K is

- a) 9 b) 6 c) -9 d) -6
-

(3) The image of point $(-4, 2)$ with rotation $R(O, 90^\circ)$ is

- a) $(-4, -2)$ b) $(4, 2)$ c) $(-2, 4)$ d) $(-2, -4)$
-

[B] Find the quotient of dividing $X^2 - 7X + 10$ by $(X - 2)$

[4]

[A] Find the solution set of the following equation in $\mathbb{Q}$?

$$(3X - 4)(3X + 4) - 9X^2 + 2X = 6$$

[B] Find the solution set of the following inequality in $\mathbb{Q}$?

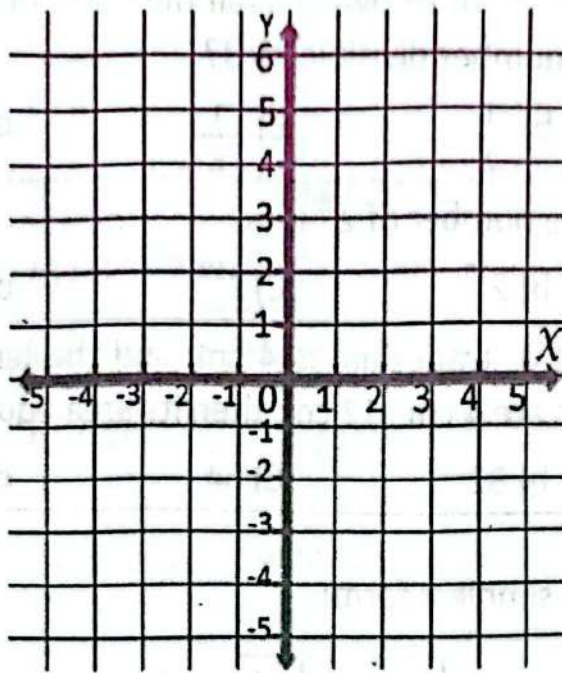
$$2 - 3(X - 5) \geq X + 7$$

[5]

[A] In the coordinate plane:

Draw $\triangle ABC$ in which $A(-2, 1)$, $B(2, 1)$, $C(0, 3)$

Then find its image by reflection in X-axis.



[B] A bag contains 4 green balls, 5 red balls, 6 black balls, all balls are identical size. A ball is drawn randomly, find the probability that the drawn ball is:

- ① Black ② Green
③ White ④ Any color



End of the questions

MODEL EXAM NO (6)**[1]****[A] Choose the correct answer:**

(1) In the experiment of throwing a fair die once, how many time of appearing number divisible by 3?

- a) $\frac{1}{3}$ b) $\frac{1}{2}$ c) $\frac{1}{6}$ d) $\frac{2}{3}$

(2) Quarter of the number of 2^{20} is

- a) 2^5 b) 2^{10} c) 2^{19} d) 2^{18}

(3) The height of a trapezium is 4 cm, and the length of its two parallel bases are 4 cm , 12 cm, then its area equals cm^2

- a) 128 b) 32 c) 64 d) 16

[B] Simplify to the simplest form:

$$\sqrt[3]{\frac{125}{27}} + \sqrt{\frac{25}{4}} - \left(\frac{3}{2}\right)^2$$

[2]**[A] Choose the correct answer:**

(1) $39 \times 10^{-8} = K \times 10^{-7}$, then the value of K =

- a) 39 b) 3.9 c) 0.39 d) 0.039

(2) $\left(\frac{x^4+x^3+x^2}{x^2}\right) = \dots\dots\dots$

- a) $X^3 + X^2$ b) $X^2 + X$ c) $X^2 + X + 1$ d) Zero

(3) The image of point (3,4) with translation $(x, y) \rightarrow (x+1, y)$?

- a) (2,4) b) (4,2) c) (4, 4) d) (4, 1)

[B] Simplify the expression $(2X - 3)(2X + 3) + 9$ then find the numerical value when $X = 10$

[3]

[A] Choose the correct answer:

(1) $\sqrt[3]{\sqrt{64}} = \dots\dots\dots$

a) 2

b) 4

c) 8

d) 64

(2) The image of the point $(0, 7)$ with reflection in Y-axis?

a) $(0, 7)$

b) $(0, -7)$

c) $(7, 0)$

d) $(-7, 0)$

(3) The area of square whose diagonal 10 cm..... Cm^2

a) 50

b) 100

c) 150

d) 200

[B] Draw angle 120° and bisect it with compasses and ruler.

[4]

[A] If the quotient of dividing $X^2 - X - 12$ by $X - 4$ where $X \neq 4$

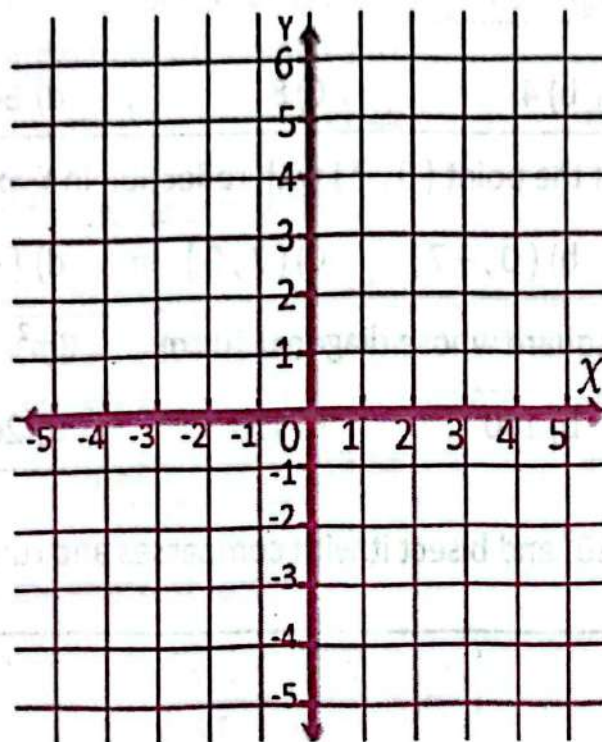
[B] Find the solution set of the following inequality in Q:

$$3 - 2X \leq 7$$

[5]

[A] On the coordinate plane draw the triangle ABC in which:

$$A(1, 1), B(5, 1), C(5, 6)$$

Then find its image with rotation $R(O, 180^\circ)$ 

[B] In the experimental of throwing a regular die once, find the probability of appearing:

- ① A number more than 6
- ② A number satisfies the inequality $1 \leq X \leq 6$
- ③ A number satisfies the inequality $2 < X < 4$

*End of the questions*

MODEL EXAM NO (7)[1][A] Choose the correct answer:

(1) Which of the following numbers isn't as scientific notation?

- a)
- 2.35×10^7
- b)
- 23.5×10^7
- c)
- 3.5×10^5
- d)
- 3.5×10^{-6}

(2) $2^x + 2^x = \dots\dots\dots$

- a)
- 4^{2x}
- b)
- 2^x
- c)
- 2^{x+1}
- d)
- 2^{2x}

(3) The area of a trapezium is 100 cm^2 , and its height 5 cm then the length of its middle base equals cm

- a) 10 b) 15 c) 20 d) 95

[B] Simplify to the simplest form:

$$(X+Y)^2 + (X+2Y)(X-2Y)$$

[2][A] Choose the correct answer:(1) If $a + 3b = 7$, $c = 3$, then the value of $a + 3(b + c) = \dots\dots\dots$

- a) 10 b) 13 c) 15 d) 16

(2) The probability of appearing a number is divisible by 2 when throwing a fair die once is

- a) Zero b)
- $33\frac{1}{3}\%$
- c) 50% d) 75%

(3) The image of point $(-a, b)$ with reflection in X-axis is

- a)
- (a, b)
- b)
- (b, a)
- c)
- $(a, -b)$
- d)
- $(-a, -b)$

- [B] Put the following expression in the simplest form then find its numerical value at $a = 2$

$$\frac{(a)^{-3} \times (a)^{-5} \times (-a)^4}{(a)^2 \times (a)^{-4} \times (a)^6}$$

[3]

[A] Choose the correct answer:

(1) $|\sqrt[3]{-125}| = \sqrt{\dots \dots \dots}$

- a) 5 b) -5 c) 25 d) -25
-

(2) The image of the point $(-4, 1)$

With translation $(X, Y) \rightarrow (X+1, Y-4)$ is

- a) $(-5, 4)$ b) $(-5, 5)$ c) $(-3, 3)$ d) $(2, -8)$
-

(3) The area of rhombus is 40 cm^2 and one of its diagonals is 10 cm , then the length of other diagonal is cm

- a) 4 b) 6 c) 8 d) 16
-

[B] Draw $\triangle ABC$ in which $AB = 5 \text{ cm}$, $m(\angle A) = 60^\circ$, $m(\angle B) = 70^\circ$

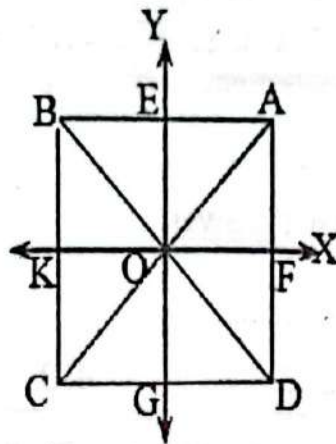
[4]

[A]

Find the solution set of the following inequality in Q :

$$2 - 3(X - 5) \geq X + 7$$

[B] In the opposite figure:



ABCD is square, F,G,K,E are midpoint of its sides, Find:

- ① Image of $\triangle AOF$ with reflection in X-axis
- ② Image of $\triangle AOF$ with rotation $R(O, 90^\circ)$

[5]

[A] If the quotient of dividing $X^3 - 8$ by $X - 2$ where $X \neq 2$

[B] In the experimental of throwing a coin twice, find the probability of appearing:

- ① A head twice
- ② A head at least one time



End of the questions

MODEL EXAM NO (8)**[1]****[A] Choose the correct answer:**

(1) $3^{-1} + 3^{-1} + 3^1 = \dots\dots\dots$

- a)
- 3^{-2}
- b)
- 3^{-3}
- c)
- 9^{-3}
- d) 1

(2) The height of a trapezium is 5 cm, and the sum of lengths of its two parallel bases is 16 cm, then its area equals cm^2

- a) 20 b) 40 c) 80 d) 160

(3) Which of the following may a probability of an event?

- a) 1.2 b) - 0.4 c) 215 % d)
- $\frac{2}{3}$

[B] Simplify to the simplest form then find the numerical value at $X=2$

$$(X-1)^2 - X(X+2)$$

[2]**[A] Choose the correct answer:**(1) If a , b are two roots for number C, then $a + b = \dots\dots\dots$

- a) 2 a b) 2 b c) 1 d) 0

(2) $0.000073 = \dots\dots\dots$

- a)
- 7.3×10^6
- b)
- 7.3×10^5
- c)
- 7.3×10^{-6}
- d)
- 7.3×10^{-5}

(3) Which of the following points its image by reflection in X-axis is itself?

- a) (2 , -3) b) (2 , 3) c) (0 , 3) d) (2 , 0)

[B] Find the solution set of the following equation in Z:

$$(X-1)^3 + 2 = -6$$

[3]

[A] Choose the correct answer:

(1) If $(X+4)(X-3) = X^2 + K - 12$, then the value of K is

- a) $-X$ b) X c) $-7X$ d) $7X$
-

(2) The image of the point $(-1, 4)$ with translation $(0, 2)$ following by $(2, 0)$ is

- a) $(2, 2)$ b) $(-2, -2)$ c) $(4, 3)$ d) $(3, 4)$
-

(3) The area of rhombus is 100 cm^2 , then the product of lengths of its two diagonals is

- a) 25 b) 50 c) 100 d) 200
-

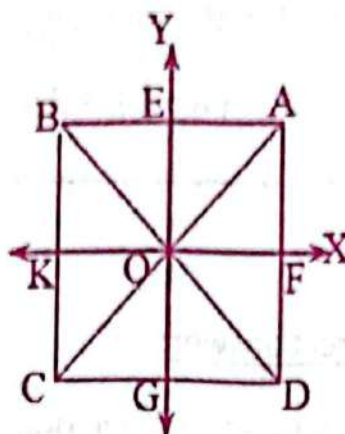
[B] Draw $\triangle ABC$ in which $AB = 5 \text{ cm}$, $BC = 4 \text{ cm}$, $m(\angle B) = 70^\circ$

[4]

[A] Find the solution set of the following inequality in Q:

$$\frac{1}{2}X + 4 \geq 3$$

[B] In the opposite figure:



ABCD is square, F,G,K,E are midpoint of its sides, Find:

- ① Image of $\triangle AOB$ with reflection in Y-axis
- ② Image of $\triangle AOB$ with rotation $R(O, 180^\circ)$

[5]

[A] If the quotient of dividing $X^3 + X + 10$ by $X + 2$ is $X^2 + aX$

Where $X \neq -2$.

[B] A classroom with 15 students, some of whom have black hair, some with brown hair, and some with yellow hair. If a student is chosen at random, find the probability that the student:

- ① Has black hair,
- ② Has non-brown hair,
- ③ Has yellow hair, or has brown hair.



End of the questions

MODEL EXAM NO (9)**[1]****[A] Choose the correct answer:**

(1) If $Y = \left(\frac{1}{2}\right)^X$, $X \in \{0, 1, 2, 3\}$, then Y has greatest value at
Y =

- a) Zero b) 1 c) 2 d) 3

(2) If the area of square is 18 cm^2 , then its diagonal is Cm

- a) 6 b) 18 c) 36 d) 160

(3) If A is an event from a random experiment with equal chances of occurring and the probability of event A is 40% and the number of elements in the sample space is 15 elements, then the number of elements of event A is equal to...

- a) 2 b) 4 c) 6 d) 10

[B] Simplify to the simplest form then find numerical value at $X = -1$

$$(X - 4)^2 - (X + 4)(X - 4)$$

[2] [A] Choose the correct answer:

(1) If $a \cdot b = 3$, $(a + b)^2 = 16$, then $a^2 + b^2 = \dots\dots\dots$

- a) 10 b) 13 c) 48 d) $5\frac{1}{3}$

(2) If the speed of light is 300000 km/sec , then the speed in m/sec equals

- a) 3×10^5 b) 3×10^7 c) 3×10^8 d) 3×10^{10}

(3) The image of point $(3, -2)$ is $(-3, 2)$ with rotation

- a) $R(O, 180^\circ)$ b) $R(O, 270^\circ)$ c) $R(O, 90^\circ)$ d) $R(O, -90^\circ)$

[B] Find in simplest form:

$$\frac{(-4)^4 \times (-4)^3 \times (4)^2}{(-4)^6 \times (-4)^5}$$

[3]

[A] Choose the correct answer:

(1) If $X = Y$, then $\left(\frac{3}{5}\right)^{X-Y} = \dots\dots\dots$

- a) $\frac{3}{5}$ b) $\frac{5}{3}$ c) Zero d) 1
-

(2) The image of the point $(-7, -2)$ with reflection in y-axis following by reflection in X-axis is point

- a) $(7, 2)$ b) $(-7, 2)$ c) $(7, -2)$ d) $(-2, 7)$
-

(3) A trapezium, its height is 3 cm, and middle base is 10 cm, then its area equals cm^2

- a) 37.5 b) 75 c) 15 d) 30
-

[B] Draw the line segment of length 7 cm and bisect it with compasses and ruler.

[4]

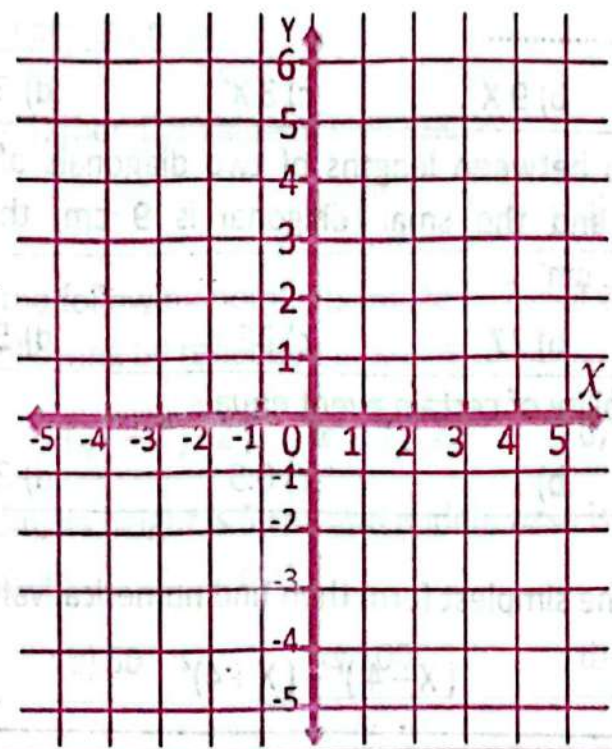
[A] Find the solution set of the following inequality in Z:

$$\frac{1}{2}(3X + 5) \leq 5$$

[B] On the coordinate plane draw the triangle ABC in which:

$$A(-3, -1), B(2, 0), C(1, 3)$$

Then find its image with translation $(-3, 1)$ following by translation $(-1, 2)$



[5]

[A] If the quotient of dividing $8X^3 - 20X^2 - 10 + 4X$ by $X^2 + 2$

[B] A bag contains 5 green balls, 6 blue balls, 4 black balls, if all balls are similar size, and a ball is drawing randomly; find the probability that of the drawn ball is:

① Black

② Green

③ Blue or green

④ Red

End of the questions

MODEL EXAM NO (10)**[1]****[A] Choose the correct answer:**

(1) $\sqrt{9x^2} = \dots\dots\dots$

- a) $3X$ b) $9X$ c) $3X^2$ d) $3|X|$

(2) If the ratio between lengths of two diagonals of a rhombus is $4 : 3$, and the small diagonal is 9 cm , then its area equals $\dots\dots\dots\text{cm}^2$

- a) 12 b) 27 c) 36 d) 54

(3) The probability of certain event equals $\dots\dots\dots$

- a) Zero b) 1 c) 0.5 d) 3

[B] Simplify to the simplest form then find numerical value at $X = -2$

$$(X - 4)^2 - (X + 4)^2$$

[2] [A] Choose the correct answer:

(1) The result of subtracting $(X + Y)^2$ from $(X - Y)^2$ equals $\dots\dots\dots$

- a) $2XY$ b) $-2XY$ c) $4XY$ d) $-4XY$

(2) The area of rectangle $X^2 + 6X + 8$ square units, and its length $X + 4$ length unit, then its width $\dots\dots\dots$ units

- a) X b) $X + 2$ c) $X - 2$ d) $X - 4$

(3) The rotation $R(O, 90^\circ)$ following with rotation $R(O, 90^\circ)$ is equivalent to rotation $\dots\dots\dots$

- a) $R(O, 180^\circ)$ b) $R(O, 270^\circ)$ c) $R(O, 90^\circ)$ d) $R(O, -270^\circ)$

[B] Find the result in scientific rotation:

$$(5.2 \times 10^8) + (6.3 \times 10^7)$$

[3].

[A] Choose the correct answer:

(1) If $5^{-3} \times a = 1$, then the value of $a = \dots\dots\dots$

- a) 5^2 b) 5^3 c) 5^0 d) 5^{-3}
-

(2) Which of the following points its image $(-7, -2)$ with reflection in y-axis following by reflection in X-axis

- a) $(7, 0)$ b) $(-7, -2)$ c) $(7, 2)$ d) $(-7, 2)$
-

(3) A trapezium, its height is 5 cm, and middle base is 10 cm, then its area equals cm^2

- a) 25 b) 50 c) 100 d) 125
-

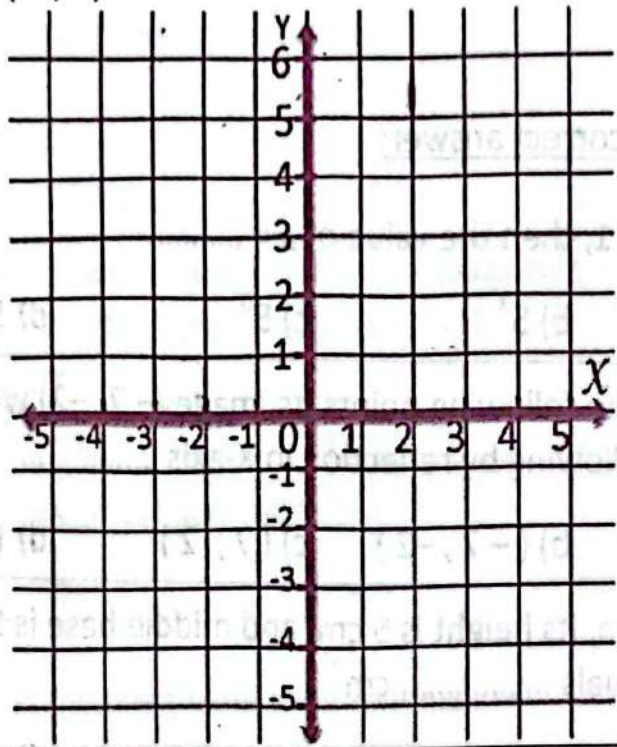
[B] Draw angle of measure 100° and bisect it with compasses and ruler.

[4]

[A] Find the solution set of the following inequality in Q:

$$2(3X - 1) \geq 4X - 3$$

- [B] On the coordinate plane draw the triangle rectangle ABCD in which: $A(-2, 2)$, $B(3, -2)$, $C(3, 1)$, $D(-2, 1)$
 Then find its image with translation $(-2, 3)$ following by translation $(2, 1)$



[5] [A] Find in the simplest form: $\frac{(-2)^7 \times 3^6}{(-2)^5 \times 3^4}$

- [B] From the following numbers $\{1, 2, 7\}$ form a number of two different digits. Write the sample space and find the probability of following events:

- ① The tens digit is even number
- ② Sum of two digits is 8
- ③ The ones digit equal the tens digit

End of the questions

MODEL EXAM NO (11)**[1]****[A] Choose the correct answer:**(1) Which of the following is additive inverse of $(-5)^2$?

- a)
- 5^{-2}
- b)
- -5^{-2}
- c)
- $(-5)^{-2}$
- d)
- $(-5)^2$

(2) The image of the point $(3, -4)$ with rotation $R(O, 90^\circ)$?

- a)
- $(4, -3)$
- b)
- $(4, 3)$
- c)
- $(3, 4)$
- d)
- $(-3, -4)$

(3) Which of the following equals $\sqrt{16x^2}$?

- a)
- $16x$
- b)
- $4x^2$
- c)
- $4x$
- d)
- $4|x|$

[B] Find the result in scientific notation:

$$(5 \times 10^4) \div (2.5 \times 10^{-3})$$

[2]**[A] Choose the correct answer:**(1) $\frac{a+b}{c} = \dots\dots\dots$

- a)
- $\frac{a}{c} + \frac{b}{c}$
- b)
- $\frac{a}{c} + b$
- c)
- $a + \frac{b}{c}$
- d)
- $\frac{a}{c} + \frac{b}{c}$

(2) In the experimental of throwing a regular die once, the probability of appearing an even number is

- a)
- $\frac{1}{4}$
- b)
- $\frac{1}{3}$
- c)
- $\frac{1}{2}$
- d)
- $\frac{1}{6}$

(3) If the side of square is 6 inch, then its area = inch square

- a) 36 b) 18 c) 24 d) 9

[B] Find in Z solution set of the inequality:

$$4X + 3 \geq 3X - 2$$

[3]

[A] Choose the correct answer:

(1) $(5X)(-2X^2) = \dots\dots\dots$

- a) $10X^3$ b) $3X^3$ c) $-10X^3$ d) $-10X^2$

(2) The image of the point $(1, 1)$ with translation 4 units to down following by translation 3 units to right is

- a) $(4, -3)$ b) $(4, 5)$ c) $(-2, -3)$ d) $(-4, -3)$

(3) Which of the following in scientific notation?

- a) 15×10^{-3} b) -3.4×10^8 c) $1.2 \times 10^{2.5}$ d) -0.1×10^{10}

[B] Which is greatest in area?

- Rhombus whose diagonals 10 cm, 8 cm
- Rectangle whose length 9 cm , width 5 cm.

[4]

[A] If the expression $(X^3 + 2X^2 + 3X + m)$ is divisible by $(X + 1)$. Find the value of m ?

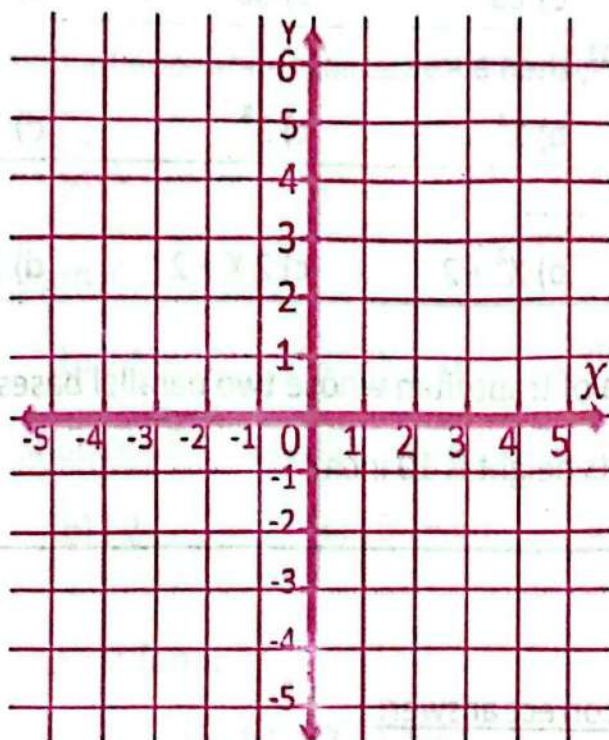
[B] Draw an angle of 130° then bisect it with ruler and compasses

[5]

[A] On the coordinate plane draw the triangle ABC in which:

$$A(-2, 2), B(1, 0), C(1, 2)$$

Then find its image with reflection in X-axis following by reflection in Y-axis?



[B] A card is drawn randomly from eight cards numbered from 4 to 13, find the probability that the drawn card has:

① An odd number.

② An even number > 9

End of the questions

MODEL EXAM NO (12)**[1]****[A] Choose the correct answer:**

(1) The area of rhombus whose diagonals 7 cm, 8 cm is Cm^2

- a) 14 b) 28 c) 30 d) 56

(2) If $3^4 \times a = 3^{12}$, then $a = \dots\dots\dots$

- a) 1^8 b) 1^3 c) 3^8 d) 3^3

(3) $X(X+2) = \dots\dots\dots$

- a) $2X + X^3$ b) $X^2 + 2$ c) $2X + 2$ d) $X^2 + 2X$

[B] Find the area of trapezium whose two parallel bases are 7 inch, 9 inch, and its height is 10 inch?

[2]**[A] Choose the correct answer:**

(1) The image of the point with reflection in X is (3, 0)

- a) (0, 3) b) (3, 0) c) (-3, 0) d) (0, -3)

(2) $\sqrt[3]{(-8)^2} = \dots\dots\dots$

- a) -4 b) -2 c) 2 d) 4

(3) $\div (-4ab) = 3ab$

- a) -12 b) $-12a^2b^2$ c) -ab d) $-\frac{4}{3}$

- [B] A bag contains 40 balls area similar in size, if the probability of drawn a red ball is $\frac{3}{5}$, find the number of red balls in the bag.
-

[3]

[A] Choose the correct answer:

- (1) The probability of appearing a head when tossing a coin once is

a) 1 b) $\frac{1}{2}$ c) $\frac{1}{4}$ d) Zero

- (2) Quarter milliard =

a) 25×10^8 b) 2.5×10^8 c) 25×10^9 d) 2.5×10^9

- (3) The image of point (5 , - 3) with translation 3 unit to left is

a) (5 , 0) b) (2 , - 3) c) (5 , - 6) d) (8 , - 3)

- [B] Find in the simplest form:

$$(X + 1)^2 - X(X + 2)$$

[4]

- [A] Draw line segment AB which its length 7 cm and bisect it at point C with ruler and compasses
-

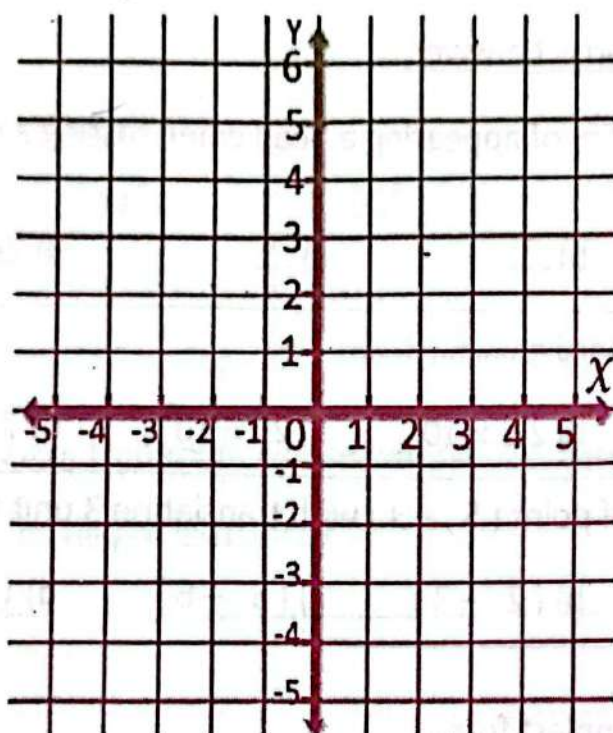
- [B] A Cuboid its volume $12 X^2 Y + 20 X Y^2$ cubic units, and its base area is $4 XY$ square units, find its height in term of X , Y.
-

[5]

[A] On the coordinate plane draw the triangle rectangle ABCD in

which: $A(1, 1)$, $B(3, 1)$, $C(3, 4)$, $D(1, 4)$

Then find its image with rotation $R(O, -90^\circ)$.



[B] Find in $\mathbb{Z}$ the solution set of the equation:

$$2x^2 + 1 = 33$$



End of the questions

حمل الآن

مجانا وحصريا

امتحانات رقم (5)

الترم الثاني



Q1 Choose the correct answer

- 1 If $a + b = 4$, and $a - b = 3$, then what is the value of $a^2 - b^2$?
 (a) 7 (b) 12 (c) 1 (d) -1
- 2 What is the standard form of the number -3.2×10^4 ?
 (a) - 32 000 (b) - 0.00032 (c) - 320 000 (d) - 0.00032
- 3 What is the image of the point $(-2, 1)$ by rotation $R(O, 180^\circ)$?
 (a) $(2, 1)$ (b) $(1, 2)$ (c) $(-1, -2)$ (d) $(2, -1)$
- 4 If $(5x^2 + 15x) \div (-5x) = ax - 3$, then what is the value of a ?
 (a) $-x$ (b) -1 (c) 1 (d) x
- 5 Which of the following equals $2 \times 2 \times 2 \times 2 \times 2$
 (a) 2×5 (b) 5^2 (c) 2^5 (d) $2 + 5$
- 6 $(2ab)(2a + 2b) = \text{-----}$
 (a) $4a^2b + 4ab^2$ (b) $4a^2b^2$ (c) $4ab^2$ (d) $2ab^2 + 2a^2b$
- 7 If $-\sqrt{4} = \sqrt[3]{a}$, then what is the value of a?
 (a) -2 (b) 4 (c) 8 (d) -8
- 8 If the area of a square is 50 square meters , then the length of its diagonal is ----- meters
 (a) 100 (b) 10 (c) 25 (d) 5
- 9 Selecting a ball from a basket containing 4 identical balls, all are red is -----
 (a) a random experiment. (b) not a random experiment.
 (c) an impossible event. (d) a simple event.

Q2 Answer the following

- 1** A square piece of agricultural land with a diagonal length of 8 kilometers. Find its area.

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- 2** Simplify to its simplest form : $(2x - 5)(2x + 5) + 25$
then find the numerical value of the result when $x = 2$

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- 3** Find the simplest form of : $\sqrt{\frac{9}{4}} + \sqrt[3]{\frac{-27}{8}} + \left(\frac{4}{9}\right)^0$

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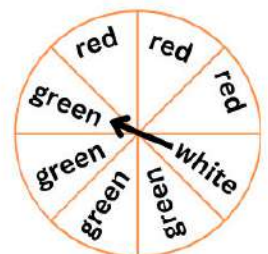
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- 4** The opposite shape represents a spinning disc game. Find :

- a** The probability that the pointer stops at the colour:

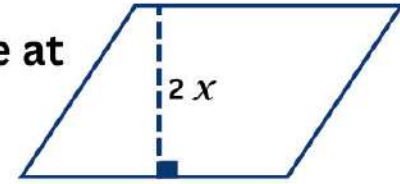
- 1** Red
- 2** Green



- b** The probability that the pointer does not stop at the colour red.

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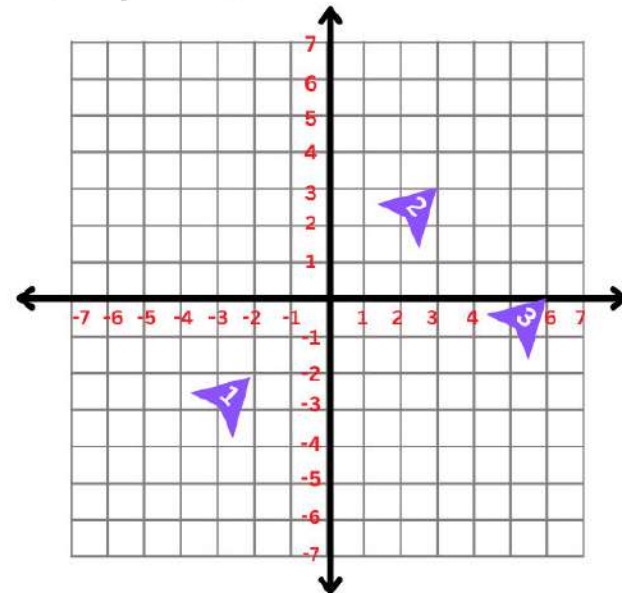
- 5 If the area of the opposite parallelogram is $(2x^3 + 4x^2 + 10x)$ square unit. and its height $2x$ unit length. Find the length of the height's corresponding base at term x



- 6 The opposite graph represents the movement of one shape in different positions with the coordinates of the position.

- a Find the translation that makes shape 2 the image of shape 1.

- b Find the translation that makes shape 3 the image of shape 1.



- 7 Draw the triangle XYZ where $YZ = XZ = 5$ cm, $XY = 6$ cm. then bisect both $\angle Y$ and $\angle X$ with two bisectors intersecting at point M.

Is $MX = MY$?

Q1 Choose the correct answer

- 1 What is the result of subtracting $(a - b)^2$ from $(a + b)^2$?
 (a) 0 (b) $2ab$ (c) $-4ab$ (d) $4ab$
- 2 Which of the following equals -4^2 ?
 (a) 16 (b) -16 (c) 8 (d) -8
- 3 ----- $\div (9x^2y) = 3xy^2$
 (a) $3xy^2$ (b) $3xy$ (c) $27x^3y^3$ (d) $27xy$
- 4 Which of the following numbers is not in scientific notation ?
 (a) 1.54×10^2 (b) -1.54×10^2 (c) 1.54×10^3 (d) -15.4×10^3
- 5 What is the value of $\sqrt[3]{\sqrt{64}}$
 (a) 2 (b) 4 (c) 8 (d) 64
- 6 A rhombus has one diagonal of length 10 cm and an area of 40 square centimeters, thus the length of the other diagonal equals..... cm.
 (a) 4 (b) 6 (c) 8 (d) 16
- 7 if $x \in \mathbb{Z}$, which of the following is a solution to the inequality: $1 - 2x < 3$?
 (a) 0 (b) -1 (c) -2 (d) -4
- 8 A card carrying a letter from the name (Fatima) is drawn randomly , what is the probability that the letter is (m)?
 (a) $\frac{1}{4}$ (b) $\frac{2}{3}$ (c) $\frac{1}{5}$ (d) $\frac{1}{6}$
- 9 What is the image of the point (a , b) by translation $(x, y) \longrightarrow (x + 2, y - 3)$
 (a) $(a - 3, b + 2)$ (b) $(a + 2, b - 3)$
 (c) $(2, -3)$ (d) $(a + 2, b + 3)$

Q2 Answer the following

- 1** A trapezium has an area of 63 square feet and the lengths of its parallel bases are 10 feet and 8 feet. Calculate its height.

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- 2** Find the quotient of : $(x^3 + x + 10)$ divided by $(x + 2)$.

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- 3** Find the solution set for the inequality in Z : $2(x + 5) - 3 < 12$

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- 4** A bag contains one red ball , 6 blue balls , and 3 green balls , all balls are identical. If a ball is drawn randomly from the bag and its colour is observed , find the probability that the drawn ball is :

a blue

b red

c blue or green

- 5 Arrange the following numbers in an ascending order :

$$7 \times 10^5, 7.8 \times 10^8, 1.1 \times 10^8, 54 \times 10^4$$

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- 6 Find the image of the square BYMX
by rotation $R(M, 90^\circ)$ followed by rotation $R(M, 90^\circ)$.

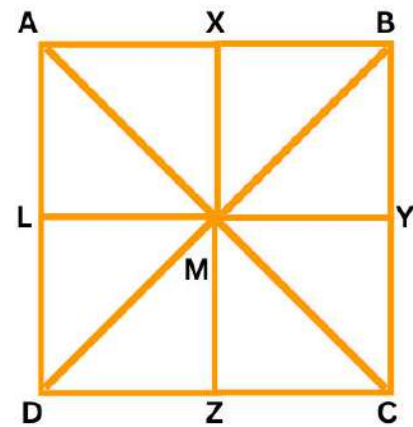
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- 7 Draw the triangle LMN where $LM = 3 \text{ cm}$,
 $m(\angle L) = 90^\circ$, and $m(\angle M) = 30^\circ$.
Find the length of $\overline{MN}$.

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Q1 Choose the correct answer

- 1 Which of the following equals $\sqrt{10^2 - 8^2}$
 (a) 2 (b) 6 (c) 36 (d) 64
- 2 The identity rotation is a rotation around the origin by an angle of measure -----
 (a) 90° (b) 180° (c) 270° (d) 360°
- 3 A square has a side length of s and an area A .
 What is the area of the square whose diagonal is $2s$?
 (a) A (b) $2A$ (c) $4A$ (d) A^2
- 4 If the speed of light is equal to $300,000 \text{ km/s}$, then what is the speed of light in m/s ?
 (a) 3×10^5 (b) 3×10^7 (c) 3×10^8 (d) 3×10^{10}
- 5 $8abc \div (8ab) = \text{-----}$
 (a) 1 (b) $8c$ (c) c (d) zero
- 6 What is the inequality that expresses "three times the number x is less than 4" ?
 (a) $3x \geq 4$ (b) $3x \leq 4$ (c) $4x \geq 3$ (d) $4x \geq 3$
- 7 If $(2x + 3)(x - 5) = 2x^2 + bx - 15$, then what is the value of b ?
 (a) $-7x$ (b) -7 (c) $7x$ (d) 7
- 8 When rolling a fair die 10 times consecutively , if the number 6 appears twice on the upper face of the die ,
 then what is the experimental probability of not appearing a 6 ?
 (a) $\frac{2}{10}$ (b) $\frac{5}{6}$ (c) $\frac{8}{10}$ (d) $\frac{1}{6}$

9 Which of the following expresses $\frac{a^6}{a^{-4}}$ in its simplest form ?

(a) a^{10}

(b) a^2

(c) a^{-2}

(d) a^{-10}

Q2 Answer the following

1 Find the solution set for the equation in Z : $(X + 3)^3 = 64$

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2 Find the quotient of : $(X^2 - 64)$ divided by $(X - 8)$

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3 Find in its simplest form: $\frac{(-x)^6 \times x^3}{(-x)^5 \times (-x)^2}$

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4 Find the area of the opposite trapezium.

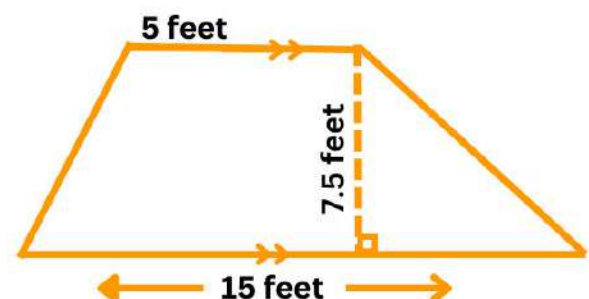
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- 5** A bag contains 15 identical cards numbered from 1 to 15. One card is drawn at random , and the number on the drawn card is observed.

Write the following events :

a A is the event "the number is even and greater than 10".

b B is the event "the number is a factor of 12".

- 6** Draw an angle with vertex A and its measure 120° , then divide it into 4 equal angles using a ruler and compass.

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- 7** Draw the triangle whose vertices are the points:

A (3 , 2) , B (8 , 2) , and C (8 , 6) .

then draw its image by reflection in the X-axis.

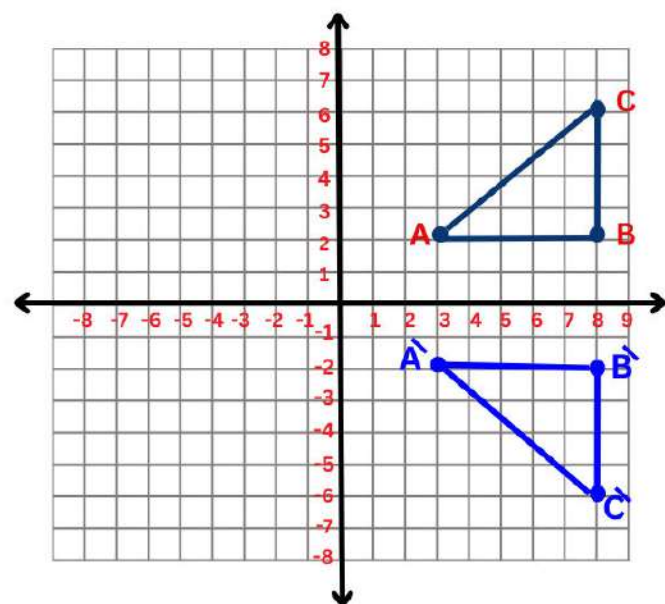
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Q1 Choose the correct answer

- 1 If $a + b = 4$, and $a - b = 3$, then what is the value of $a^2 - b^2$?
 (a) 7 (b) 12 (c) 1 (d) -1
- 2 What is the standard form of the number -3.2×10^4 ?
 (a) -32 000 (b) -0.00032 (c) -320 000 (d) -0.00032
- 3 What is the image of the point $(-2, 1)$ by rotation $R(O, 180^\circ)$?
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- 4 If $(5x^2 + 15x) \div (-5x) = ax - 3$, then what is the value of a ?
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- 8 If the area of a square is 50 square meters, then the length of its diagonal is ----- meters
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- 9 Selecting a ball from a basket containing 4 identical balls, all are red is -----
 (a) a random experiment. (b) not a random experiment.
 (c) an impossible event. (d) a simple event.

- 1 A square piece of agricultural land with a diagonal length of 8 kilometers. Find its area.

$$\text{The area of the square} = \frac{1}{2} \times d^2 = \frac{1}{2} \times 8^2 = 32 \text{ cm}^2$$

- 2 Simplify to its simplest form : $(2x - 5)(2x + 5) + 25$
then find the numerical value of the result when $x = 2$

$$\text{The expression : } 4x^2 - 25 + 25 = 4x^2$$

$$\text{The value : } 4 \times (2^2) = 4 \times 4 = 16$$

- 3 Find the simplest form of : $\sqrt{\frac{9}{4}} + \sqrt[3]{\frac{-27}{8}} + \left(\frac{4}{9}\right)^0$

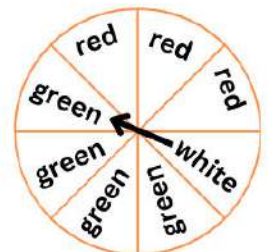
$$\frac{3}{2} + \frac{-3}{2} - 1 = -1$$

- 4 The opposite shape represents a spinning disc game. Find :

- a) The probability that the pointer stops at the colour:

1 Red $\frac{3}{8}$

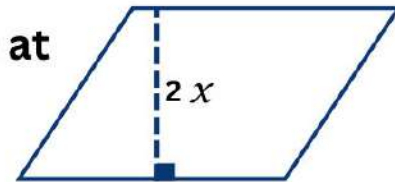
2 Green $\frac{4}{8} = \frac{1}{2}$



- b) The probability that the pointer does not stop at the colour red.

$$\frac{5}{8}$$

- 5 If the area of the opposite parallelogram is $(2x^3 + 4x^2 + 10x)$ square unit. and its height $2x$ unit length.
Find the length of the height's corresponding base at term x



The base = $\frac{2x^3 + 4x^2 + 10x}{2x} = x^2 + 2x + 5$ length units.

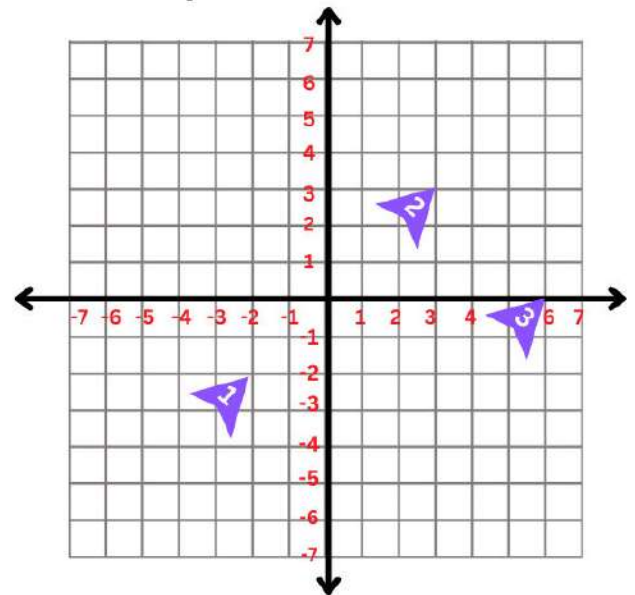
- 6 The opposite graph represents the movement of one shape in different positions with the coordinates of the position.

- a Find the translation that makes shape 2 the image of shape 1.

$(x + 5, y + 5)$

- b Find the translation that makes shape 3 the image of shape 1.

$(x + 8, y + 2)$



- 7 Draw the triangle XYZ where $YZ = XZ = 5$ cm, $XY = 6$ cm. then bisect both $\angle Y$ and $\angle X$ with two bisectors intersecting at point M.

Is $MX = MY$?

Draw by yourself

Q1 Choose the correct answer

- 1 What is the result of subtracting $(a - b)$ from $(a + b)$?
 (a) 0 (b) $2ab$ (c) $-4ab$ (d) $4ab$
- 2 Which of the following equals -4^2 ?
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- 9 What is the image of the point (a, b) by translation $(x, y) \longrightarrow (x + 2, y - 3)$
 (a) $(a - 3, b + 2)$ (b) $(a + 2, b - 3)$
 (c) $(2, -3)$ (d) $(a + 2, b + 3)$

- 1 A trapezium has an area of 63 square feet and the lengths of its parallel bases are 10 feet and 8 feet. Calculate its height.

$$\text{The area} = \frac{1}{2} (b_1 + b_2) \times h \quad 63 = \frac{1}{2} (10 + 8) \times h$$

$$h = \frac{63}{9} = 7$$

The length of the height = 7 cm.

- 2 Find the quotient of : $(x^3 + x + 10)$ divided by $(x + 2)$.

$$\text{The quotient} = x^2 - 2x + 5$$

- 3 Find the solution set for the inequality in Z : $2(x + 5) - 3 < 12$

$$2x + 10 - 3 < 12$$

$$2x + 7 < 12$$

$$2x < 12 - 7$$

$$2x < 5$$

$$x < \frac{5}{2}$$

$$\text{S.S} = \{ 2, 1, -1, \dots \}$$

- 4 A bag contains one red ball , 6 blue balls , and 3 green balls , all balls are identical. If a ball is drawn randomly from the bag and its colour is observed , find the probability that the drawn ball is :

(a) blue $\frac{6}{10} = \frac{3}{5}$

(b) red $\frac{1}{10}$

(c) blue or green $\frac{9}{10}$

- 5 Arrange the following numbers in an ascending order :

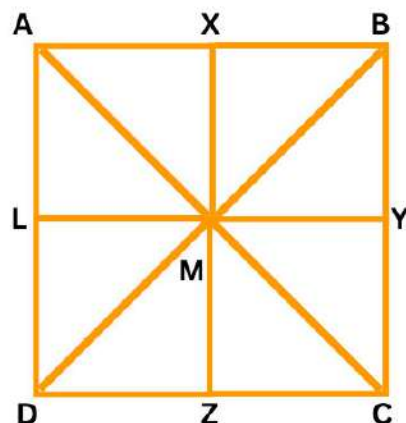
$$7 \times 10^5, 7.8 \times 10^8, 1.1 \times 10^8, 54 \times 10^4$$

$$54 \times 10^4, 7 \times 10^5, 1.1 \times 10^8, 7.8 \times 10^8$$

- 6 Find the image of the square BYMX
by rotation $R(M, 90^\circ)$ followed by rotation $R(M, 90^\circ)$.

The image of the square BYMX $\xrightarrow{R(M, 90^\circ)}$

The square AXML $\xrightarrow{R(M, 90^\circ)}$ The square DLMZ



- 7 Draw the triangle LMN where $LM = 3 \text{ cm}$,
 $m(\angle L) = 90^\circ$, and $m(\angle M) = 30^\circ$.
Find the length of $\overline{MN}$.

Draw by yourself

From the drawing, the length of $\overline{MN} = 3.5 \text{ cm}$

Q1 Choose the correct answer

- 1 Which of the following equals $\sqrt{10^2 - 8^2}$
 (a) 2 (b) 6 (c) 36 (d) 64
- 2 The identity rotation is a rotation around the origin by an angle of measure -----
 (a) 90° (b) 180° (c) 270° (d) 360°
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 (a) $\frac{2}{10}$ (b) $\frac{5}{6}$ (c) $\frac{8}{10}$ (d) $\frac{1}{6}$

9 Which of the following expresses $\frac{a^6}{a^{-4}}$ in its simplest form ?

(a) a^{10}

(b) a^2

(c) a^{-2}

(d) a^{-10}

Q2 Answer the following

1 Find the solution set for the equation in Z : $(X + 3)^3 = 64$

$$\sqrt[3]{(x + 3)} = 64$$

$$X + 3 = 4$$

$$X = 4 - 3 = 1 \quad \text{S.S} = \{1\}$$

2 Find the quotient of : $(X^2 - 64)$ divided by $(X - 8)$

$$\text{The quotient} = X + 8$$

3 Find in its simplest form: $\frac{(-x)^6 \times x^3}{(-x)^5 \times (-x)^2}$

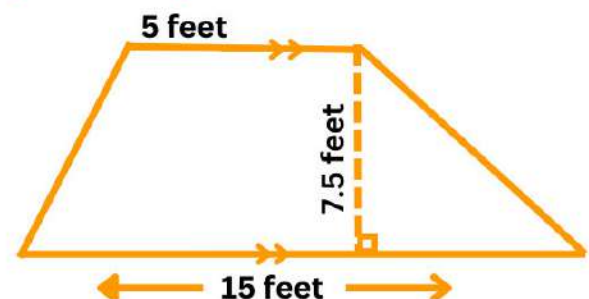
$$\frac{x^6 \times x^3}{-x^5 \times x^2} = \frac{x^9}{-x^7} = -x^{9-7} = -x^2$$

4 Find the area of the opposite trapezium.

$$\text{The area} = \frac{1}{2} (b_1 + b_2) \times h \quad A = \frac{1}{2} (15 + 5) \times 7.5$$

$$A = 75 \text{ square feet}$$

$$\text{The Area of trapezium} = 75 \text{ square feet}$$



- 5** A bag contains 15 identical cards numbered from 1 to 15. One card is drawn at random , and the number on the drawn card is observed. Write the following events :

(a) A is the event "the number is even and greater than 10". $\frac{2}{15}$

(b) B is the event "the number is a factor of 12". $\frac{6}{15} = \frac{2}{5}$

- 6** Draw an angle with vertex A and its measure 120° , then divide it into 4 equal angles using a ruler and compass.

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- 7** Draw the triangle whose vertices are the points:

A (3 , 2) , B (8 , 2) , and C (8 , 6) .

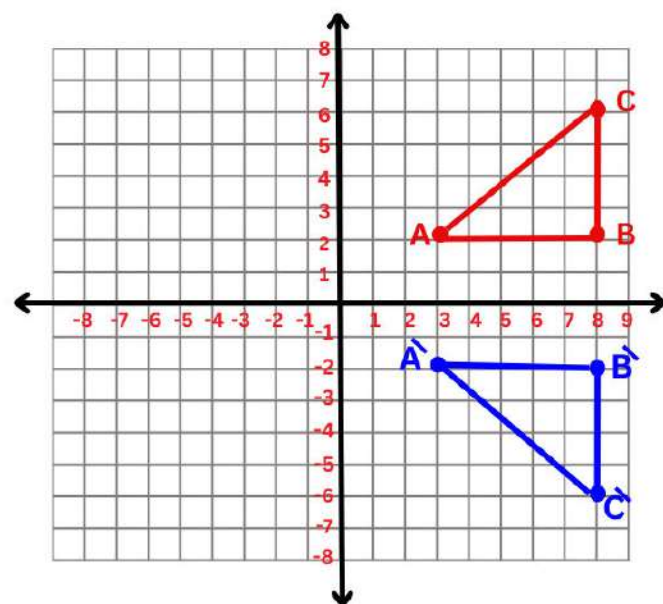
then draw its image by reflection in the X-axis.

By reflection on X axis

A (3 , 2) $\longrightarrow$ A' (3 , -2)

B (8 , 2) $\longrightarrow$ B' (8 , -2)

C (8 , 6) $\longrightarrow$ C' (8 , -6)

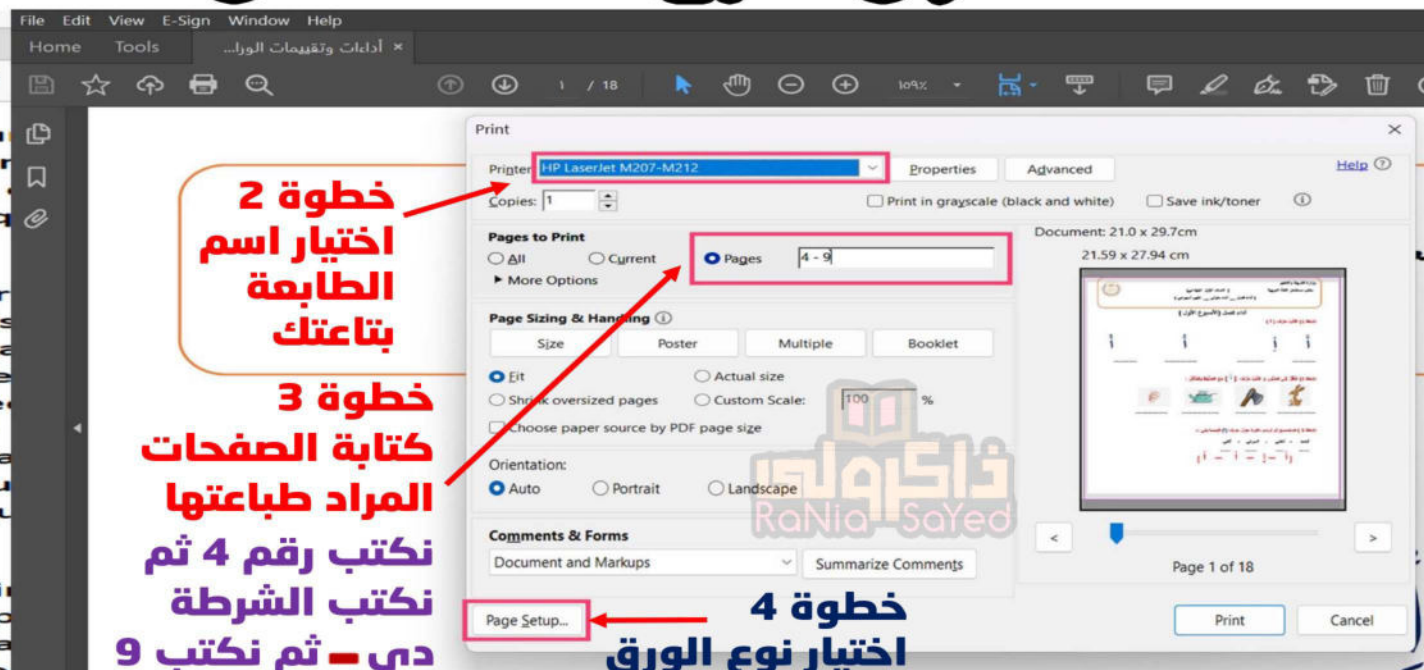


كيفية طباعة صفحات معينة من ملف معين

مثلا ازاي نطبع الصفحات من صفحة 4 الى صفحة 9



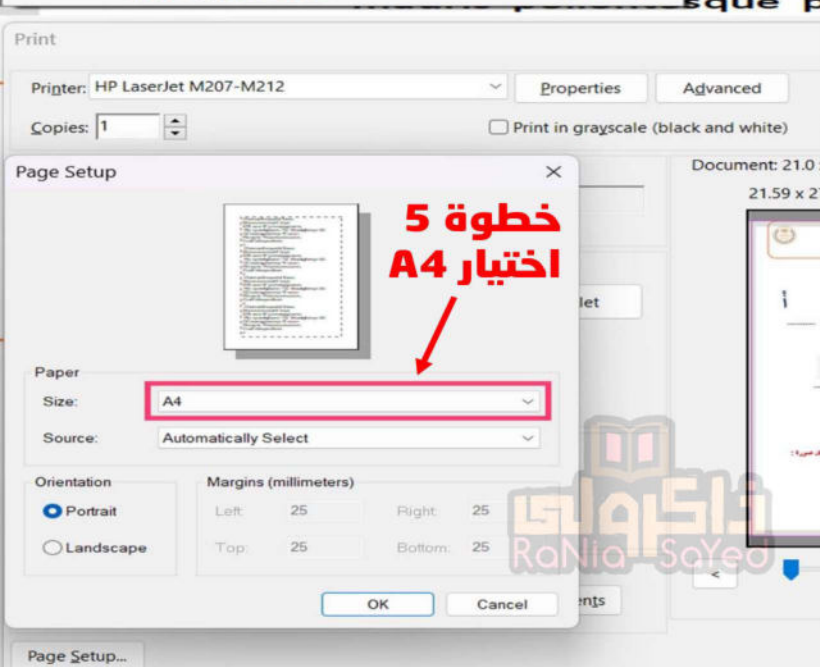
خطوة 1



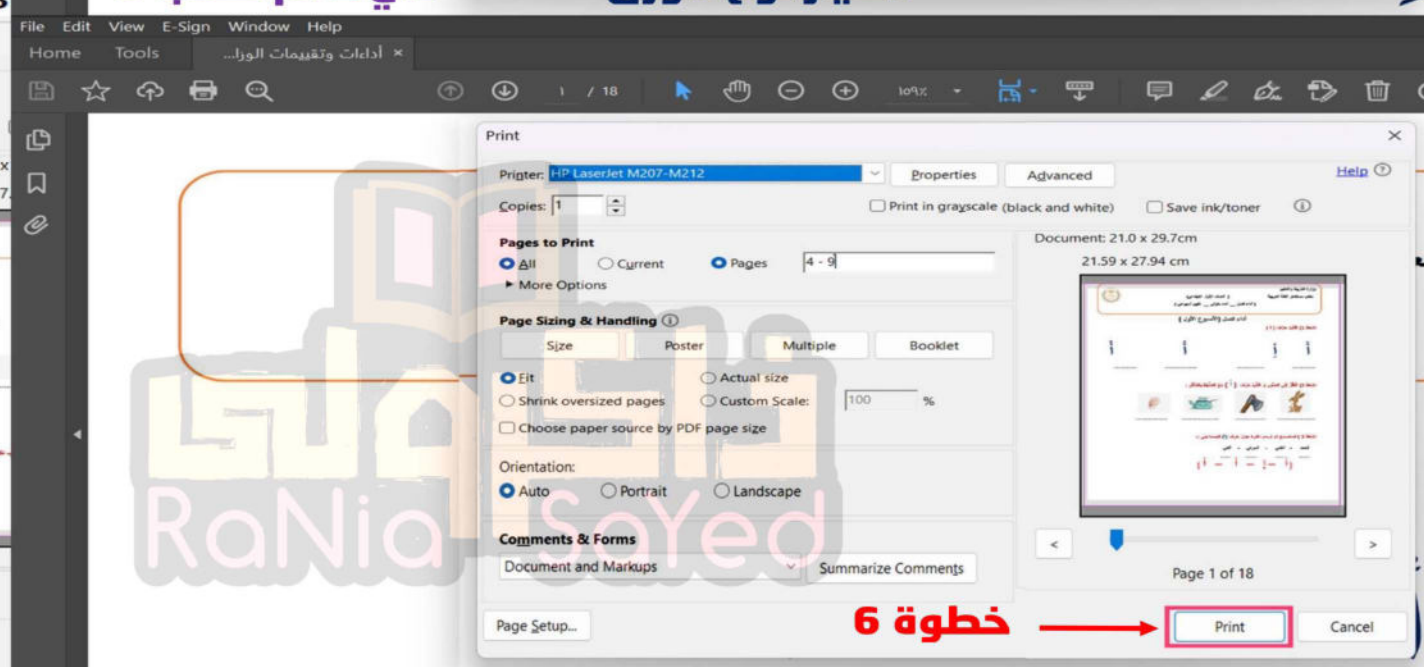
خطوة 2
اختيار اسم
الطابعة
بتاعتك

خطوة 3
كتابة الصفحات
المراد طباعتها
نكتب رقم 4 ثم
نكتب الشرطة
دي - ثم نكتب 9

خطوة 4
اختيار نوع الورق



خطوة 5
اختيار A4



خطوة 6